

SEQUENCE LISTING

<110> Falco, S. Carl
Allen, Stephen M.

<120> Plant Amino Acid Biosynthetic Enzymes

<130> BB1116 US CIP

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<150> 09/424,976

<151> 1999-12-02

<150> 60/065,385

<151> 1997-11-12

<150> 60/049,406

<151> 1997-06-12

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<211> 826

<212> DNA

<213> Oryza sativa

<400> 1

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cggttttgct	ctatcttctg	cacaagtgtg	gaagaaatct	gaaattggga	aattggagtg	780
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<211> 195

<212> PRT

<213> Oryza sativa

<400> 2

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Ala	Ala	Ser	Gly	Ala	Gly	Ala	Ala	Ala	Met	Glu	Glu	Leu	Lys	Leu	Gln
			20					25						30	

Thr	Gln	Glu	Val	Leu	Ala	Gly	Lys	Ala	Pro	Thr	Cys	Asn	Ile	Phe	Ser
	35						40					45			

Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala Pro Ile Val Glu
 50 55 60
 Asn Gly Tyr Asn Glu Glu Met Lys Met Val Lys Glu Thr Arg Lys
 65 70 75 80
 Ile Trp Asn Asp Lys Asp Val Lys Val Thr Ala Thr Cys Ile Arg Val
 85 90 95
 Pro Val Met Arg Ala His Ala Glu Ser Val Asn Leu Gln Phe Glu Lys
 100 105 110
 Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg Ala Ala Glu Gly
 115 120 125
 Val Thr Ile Ile Asp Asp Arg Ala Ser Asn Arg Phe Pro Thr Pro Leu
 130 135 140
 Glu Val Ser Asp Lys Asp Asp Val Ala Val Gly Arg Ile Arg Gln Asp
 145 150 155 160
 Leu Ser Gln Asp Asp Asn Lys Gly Leu Asp Ile Phe Val Cys Gly Asp
 165 170 175
 Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala Val Gln Ile Ala Glu Met
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 Leu Leu Lys
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<210> 3
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 <212> DNA
 <213> Triticum aestivum

<400> 3
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 ctacgagaag aagtgaaga cgggcttttag tcatctgttg cacacaaaag tgcagccaca 780
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<210> 4
 <211> 201
 <212> PRT
 <213> Triticum aestivum

<400> 4

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Glu Glu Leu Lys Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro Pro
35 40 45

Thr Cys Asn Ile Phe Ser Gln Gln Tyr Ala Phe Asn Ile Phe Ser His
50 55 60

Asn Ala Pro Ile Val Glu Asn Gly Tyr Asn Glu Glu Glu Met Lys Met
65 70 75 80

Val Lys Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Arg Val Thr
85 90 95

Ala Thr Cys Ile Arg Val Pro Thr Met Arg Ala His Ala Glu Ser Val
100 105 110

Asn Leu Gln Phe Glu Lys Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile
115 120 125

Leu Arg Ala Ala Pro Gly Val Thr Ile Ser Asp Asp Arg Ala Ala Asn
130 135 140

Arg Phe Pro Thr Pro Leu Glu Val Ser Asp Lys Asp Asp Val Ser Val
145 150 155 160

Gly Arg Ile Arg Gln Asp Leu Ser Gln Asp Asp Asn Arg Gly Leu Glu
165 170 175

Leu Phe Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala
180 185 190

Val Gln Ile Ala Glu Met Leu Leu Lys
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<211> 457

<212> DNA

<213> Glycine max

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tcgcgctctt cagcgcnggg ggtccatcaa nnaagcattc ggaccatcgn cgtaaatacgn 420
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<211> 86
<212> PRT
<213> Glycine max

<400> 6
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Met Ser Leu Arg Glu Asn Gly Pro Ser Ile Ala Val Val Gly Val Thr
35 40 45
Gly Ala Val Gly Gln Glu Phe Leu Ser Val Leu Ser Asp Arg Asp Phe
50 55 60

Pro Tyr Arg Ser Ile His Met Leu Ala Ser Lys Arg Ser Ala Gly Arg
65 70 75 80

Arg Ile Thr Phe Glu Asp
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<210> 7

<211> 160

<212> PRT

<213> Legionella pneumophila

<400> 7

Met Ser Arg His Leu Asn Val Ala Ile Val Gly Ala Thr Gly Ala Val
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Gly Glu Thr Phe Leu Thr Val Leu Glu Arg Asn Phe Pro Ile Lys
20 25 30

Ser Leu Tyr Pro Leu Ala Ser Ser Arg Ser Val Gly Lys Thr Val Thr
35 40 45

Phe Arg Asp Gln Glu Leu Asp Val Leu Asp Leu Ala Glu Phe Asp Phe
50 55 60

Ser Lys Val Asp Leu Ala Leu Phe Ser Ala Gly Gly Ala Val Ser Lys
65 70 75 80

Glu Tyr Ala Pro Lys Ala Val Ala Ala Gly Cys Val Val Val Asp Asn
85 90 95

Thr Ser Cys Phe Arg Tyr Glu Asp Asp Ile Pro Leu Val Val Pro Gly
100 105 110

Ser Glu Ser Ser Ser Asn Arg Asp Tyr Thr Lys Arg Gly Ile Ile Ala
115 120 125

Asn Pro Asn Cys Ser Thr Ile Gln Met Val Val Ala Leu Lys Pro Ile
130 135 140

Tyr Asp Ala Val Gly Ile Ser Arg Ile Asn Val Ala Thr Tyr Gln Ser
145 150 155 160

<210> 8

<211> 1054

<212> DNA

<213> Zea mays

<400> 8

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tgttgccacg	ggaaataaaa	cgtctaaatt	tgggatccgc	aatgagaaat	tgcaatgggt	240
tttgactct	atcaagtcac	accggaatga	aatcaaactc	gttggtgttc	attgccatct	300
gggatctact	attacaaagg	ttgatataat	cagagatgct	gcagttctta	tgctgaatta	360
tgtcgatgaa	attcgagcac	aaggttttta	gttgaggtac	ctgaatatcg	gagggtgggtt	420
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gattgctaata	acttgctgct	tcgtcaatag	agtaactggt	gttaaactcta	atggtacaaa	600

gaatttcatt	gttggtgatg	gcagcatggc	agaactcatc	agacctagtc	tgtatggagc	660
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cgttaagatc	aggcatggag	agaagcttga	tgactacatg	aagttctttg	atggtcttcc	960
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<210> 9
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 <212> PRT
 <213> Zea mays

<400> 9

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		20						25					30		
Val	Arg	Ala	Ala	Arg	Ala	Thr	Gly	Lys	Lys	Val	Pro	Val	Leu	Leu	Arg
		35					40					45			
Ile	Asn	Pro	Asp	Val	Asp	Pro	Gln	Val	His	Pro	Tyr	Val	Ala	Thr	Gly
	50					55					60				
Asn	Lys	Thr	Ser	Lys	Phe	Gly	Ile	Arg	Asn	Glu	Lys	Leu	Gln	Trp	Phe
65					70					75					80
Leu	Asp	Ser	Ile	Lys	Ser	Tyr	Pro	Asn	Glu	Ile	Lys	Leu	Val	Gly	Val
				85					90					95	
His	Cys	His	Leu	Gly	Ser	Thr	Ile	Thr	Lys	Val	Asp	Ile	Phe	Arg	Asp
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Ala	Ala	Val	Leu	Met	Leu	Asn	Tyr	Val	Asp	Glu	Ile	Arg	Ala	Gln	Gly
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Phe	Lys	Leu	Glu	Tyr	Leu	Asn	Ile	Gly	Gly	Gly	Leu	Gly	Ile	Asp	Tyr
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His	His	Thr	Asp	Ala	Val	Leu	Pro	Thr	Pro	Met	Asp	Leu	Ile	Asn	Thr
145					150					155					160
Val	Arg	Glu	Leu	Val	Leu	Ser	Gln	Asp	Leu	Thr	Leu	Ile	Ile	Glu	Pro
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Gly	Arg	Ser	Leu	Ile	Ala	Asn	Thr	Cys	Cys	Phe	Val	Asn	Arg	Val	Thr
			180					185					190		
Gly	Val	Lys	Ser	Asn	Gly	Thr	Lys	Asn	Phe	Ile	Val	Val	Asp	Gly	Ser
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Met	Ala	Glu	Leu	Ile	Arg	Pro	Ser	Leu	Tyr	Gly	Ala	Tyr	Gln	His	Ile
	210					215					220				
Glu	Leu	Val	Ser	Pro	Pro	Thr	Pro	Gly	Ala	Glu	Ala	Ala	Thr	Phe	Asp
225					230					235					240

Ile Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg
245 250 255

Glu Leu Pro Thr Pro Asp Glu Gly Ala Gly Leu Val Val His Asp Ala
260 265 270

Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Leu Arg
275 280 285

Pro Pro Glu Tyr Trp Val Glu Ala Asp Gly Ser Ile Val Lys Ile Arg
290 295 300

His Gly Glu Lys Leu Asp Asp Tyr Met Lys Phe Phe Asp Gly Leu Pro
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<210> 10
<211> 1813
<212> DNA
<213> Zea mays

<400> 10

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taaagtgtga	tagtgaattt	gatttagaga	atattgtcag	agctgcaaga	gctactggaa	660
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<210> 11
<211> 486
<212> PRT
<213> Zea mays

<400> 11

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Phe Pro Arg Arg Arg Ala Arg Leu Ser Val Cys Ala Ser Val Ser Met
35 40 45

Ala Ser Pro Ser Pro Pro Pro Gln Pro Ala Ala Ala Gly Val Pro Lys
50 55 60

His Cys Phe Arg Arg Gly Ala Asp Gly Tyr Leu Tyr Cys Glu Gly Val
65 70 75 80

Arg Val Glu Asp Ala Met Ala Ala Ala Glu Arg Ser Pro Phe Tyr Leu
85 90 95

Tyr Ser Lys Leu Gln Ile Leu Arg Asn Phe Ala Ala Tyr Arg Asp Ala
100 105 110

Leu Gln Gly Leu Arg Ser Ile Val Gly Tyr Ala Val Lys Ala Asn Asn
115 120 125

Asn Leu Pro Val Leu Arg Val Leu Arg Glu Leu Gly Cys Gly Ala Val
130 135 140

Leu Val Ser Gly Asn Glu Leu Arg Leu Ala Leu Gln Ala Gly Phe Asp
145 150 155 160

Pro Ala Arg Cys Ile Phe Asn Gly Asn Gly Lys Thr Leu Glu Asp Leu
165 170 175

Lys Leu Ala Ala Glu Ser Gly Val Phe Val Asn Val Asp Ser Glu Phe
180 185 190

Asp Leu Glu Asn Ile Val Arg Ala Ala Arg Ala Thr Gly Lys Lys Val
195 200 205

Pro Val Leu Leu Arg Ile Asn Pro Asp Val Asp Pro Gln Val His Pro
210 215 220

Tyr Val Ala Thr Gly Asn Lys Thr Ser Lys Phe Gly Ile Arg Asn Glu
225 230 235 240

Lys Leu Gln Trp Phe Leu Asn Ser Ile Lys Ser Tyr Ser Asn Glu Ile
245 250 255

Lys Leu Val Gly Val His Cys His Leu Gly Ser Thr Ile Thr Lys Val
260 265 270

Asp Ile Phe Arg Asp Ala Ala Val Leu Met Val Asn Tyr Val Asp Glu
275 280 285

Ile Arg Ala Gln Gly Phe Lys Leu Glu Tyr Leu Asn Ile Gly Gly Gly
290 295 300

Leu Gly Ile Asp Tyr His His Thr Asp Ala Val Leu Pro Thr Pro Met
 305 310 315 320
 Asp Leu Ile Asn Thr Val Arg Glu Leu Val Leu Ser Gln Asp Leu Thr
 325 330 335
 Leu Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe
 340 345 350
 Val Asn Arg Val Thr Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile
 355 360 365
 Val Val Asp Gly Ser Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly
 370 375 380
 Ala Tyr Gln His Ile Glu Leu Val Ser Pro Pro Thr Pro Gly Ala Glu
 385 390 395 400
 Val Ala Thr Phe Asp Ile Val Gly Pro Val Cys Glu Ser Ala Asp Phe
 405 410 415
 Leu Gly Lys Asp Arg Glu Leu Pro Thr Pro Asp Glu Gly Ala Gly Leu
 420 425 430
 Val Val His Asp Ala Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr
 435 440 445
 Asn Leu Lys Leu Arg Pro Pro Glu Tyr Trp Val Glu Glu Asp Gly Ser
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 Ile Val Lys Ile Arg His Glu Glu Lys Leu Asp Asp Tyr Met Lys Phe
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<210> 12

<211> 1116

<212> DNA

<213> *Oryza sativa*

<400> 12

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tattggcgggt	ggcctgggca	tagwttatca	ccacacggat	gcagtcttgc	ctacacctat	420
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1080
 1116

<210> 13
 <211> 306
 <212> PRT
 <213> *Oryza sativa*

<400> 13

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			20					25					30		
Arg	Ile	Asn	Pro	Asp	Val	Asp	Pro	Gln	Val	His	Pro	Tyr	Val	Ala	Thr
		35					40					45			
Gly	Asn	Lys	Thr	Ser	Lys	Phe	Gly	Ile	Arg	Asn	Glu	Lys	Leu	Gln	Trp
	50					55					60				
Phe	Leu	Asp	Ser	Ile	Lys	Ser	Tyr	Ser	Asn	Asp	Ile	Thr	Leu	Val	Gly
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Val	His	Cys	His	Leu	Gly	Ser	Thr	Ile	Thr	Lys	Val	Asp	Ile	Phe	Arg
				85					90					95	
Asp	Ala	Ala	Gly	Leu	Met	Val	Asn	Tyr	Val	Asp	Glu	Ile	Arg	Ala	Gln
			100					105					110		
Gly	Phe	Glu	Leu	Glu	Tyr	Leu	Asn	Ile	Gly	Gly	Gly	Leu	Gly	Ile	Xaa
		115					120					125			
Tyr	His	His	Thr	Asp	Ala	Val	Leu	Pro	Thr	Pro	Met	Gly	Pro	His	Gln
						135					140				
His	Cys	Ala	Glu	Glu	Leu	Val	Leu	Ser	Arg	Asp	Leu	Thr	Leu	Ile	Ile
145					150					155					160
Glu	Pro	Gly	Arg	Ser	Leu	Ile	Ala	Asn	Thr	Cys	Cys	Phe	Val	Asn	Arg
				165					170					175	
Val	Thr	Gly	Val	Lys	Ser	Asn	Gly	Thr	Lys	Asn	Phe	Ile	Val	Val	Asp
			180					185					190		
Gly	Ser	Met	Ala	Glu	Leu	Ile	Arg	Pro	Ser	Leu	Tyr	Gly	Ala	Tyr	Gln
		195					200					205			
His	Ile	Glu	Leu	Val	Ser	Pro	Ser	Pro	Asp	Ala	Glu	Val	Ala	Thr	Phe
	210					215					220				
Asp	Ile	Val	Gly	Pro	Val	Cys	Glu	Ser	Ala	Asp	Phe	Leu	Gly	Lys	Asp
225					230					235				240	
Arg	Glu	Leu	Pro	Thr	Pro	Asp	Lys	Gly	Ala	Gly	Leu	Val	Val	His	Asp
				245					250					255	
Ala	Gly	Ala	Tyr	Cys	Met	Ser	Met	Ala	Ser	Thr	Tyr	Asn	Leu	Lys	Leu
			260					265					270		

Arg Pro Pro Glu Tyr Trp Val Glu Asp Asp Gly Ser Ile Ala Lys Ile
275 280 285

Arg Arg Gly Glu Ser Phe Asp Asp Tyr Met Lys Phe Phe Asp Asn Leu
290 295 300

Ser Ala
305

<210> 14

<211> 968

<212> DNA

<213> Glycine max

<400> 14

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ggttcaacaa	ttaccaaggt	tgacattttc	agggatgcag	ccaccattat	gatcaactac	180
attgacacaa	tccgagatca	gggttttgaa	gttgattact	taaatattgg	tggaggactt	240
gggatagatt	attatcattc	tggtgccatc	cttcctacac	ctagagatct	cattgacact	300
gtacgagatc	ttgttatttc	acgtggtc	aatctcatca	ttgaaccagg	aagatcactc	360
attgcaaaca	cgtgttgctt	agttaaccgg	gtgacaggtg	ttaaaactaa	tggatctaaa	420
aacttcattg	taattgatgg	aagtatggct	gaaettatcc	gccctagtct	ttatgatgct	480
taccagcata	tagagctgg	ttcccctgcc	ccgtcaaagt	ctgaaacaga	aacttttgat	540
gtggttgcc	ctgtctgtga	gtctgcagat	ttcttaggaa	aaggaagaga	acttcctact	600
ccagccaagg	gtactgggtt	gggtgttc	gatgctgg	cttattgcat	gagcatggca	660
tcaacctaca	atctaaagat	gcggcctc	gagtattgg	ttgaagatga	tggatcagtg	720
agcaaaataa	gacatggaga	gacttttgaa	gaccacattc	ggtttttg	ggggctttga	780
gctaataatt	tatctttag	gaaagaaggc	tggagaattg	ttatgtactt	ggagtttgaa	840
tctttctc	tcaatgaatg	catgactc	gtagtctgt	ttcttccgtt	ctaattgaat	900
gttgactccc	atgacaggaa	cagagaataa	agttgatttc	agttagattt	aaaaaaaa	960
aaaaaaaa						968

<210> 15

<211> 259

<212> PRT

<213> Glycine max

<400> 15

Val	Ala	Thr	Gly	Asn	Lys	Asn	Ser	Lys	Phe	Gly	Ile	Arg	Asn	Glu	Lys
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Leu	Gln	Cys	Phe	Leu	Asp	Ala	Val	Lys	Glu	His	Pro	Asn	Glu	Leu	Lys
			20					25					30		
Leu	Val	Gly	Ala	His	Cys	His	Leu	Gly	Ser	Thr	Ile	Thr	Lys	Val	Asp
		35					40					45			
Ile	Phe	Arg	Asp	Ala	Ala	Thr	Ile	Met	Ile	Asn	Tyr	Ile	Asp	Gln	Ile
	50					55					60				
Arg	Asp	Gln	Gly	Phe	Glu	Val	Asp	Tyr	Leu	Asn	Ile	Gly	Gly	Gly	Leu
65					70					75					80
Gly	Ile	Asp	Tyr	Tyr	His	Ser	Gly	Ala	Ile	Leu	Pro	Thr	Pro	Arg	Asp
				85					90					95	

Leu Ile Asp Thr Val Arg Asp Leu Val Ile Ser Arg Gly Leu Asn Leu
 100 105 110
 Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Leu Val
 115 120 125
 Asn Arg Val Thr Gly Val Lys Thr Asn Gly Ser Lys Asn Phe Ile Val
 130 135 140
 Ile Asp Gly Ser Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Asp Ala
 145 150 155 160
 Tyr Gln His Ile Glu Leu Val Ser Pro Ala Pro Ser Asn Ala Glu Thr
 165 170 175
 Glu Thr Phe Asp Val Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu
 180 185 190
 Gly Lys Gly Arg Glu Leu Pro Thr Pro Ala Lys Gly Thr Gly Leu Val
 195 200 205
 Val His Asp Ala Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn
 210 215 220
 Leu Lys Met Arg Pro Pro Glu Tyr Trp Val Glu Asp Asp Gly Ser Val
 225 230 235 240
 Ser Lys Ile Arg His Gly Glu Thr Phe Glu Asp His Ile Arg Phe Phe
 245 250 255
 Glu Gly Leu

<210> 16
 <211> 676
 <212> DNA
 <213> Triticum aestivum

<220>
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gatcttactc	tcattattga	acctggaaga	tccctgatcg	ccaatacttg	ctgcttcgtc	180
aataaggtca	ctggtgtaaa	atcgaatggc	acgaagaatt	tcattgtagt	tgatggcagc	240
atggccgagc	tcatacaggcc	tagtctatat	ggagcatatc	agcatataga	actagtcttc	300
cctctccaag	gtgcagaagt	agcaaccttc	cgatattggt	ggggccagtc	tgccaatctg	360
cagattcctt	ggnaaagaca	aggagttcca	acacctgaca	aggganctgg	tttgggtgtc	420
cacgacgcan	ganctactgc	atgagcatgg	cttcnaccta	caacctgaag	atgaggcaac	480
cgagtattgg	gtanaggaca	tggncatgt	aagataagca	cggggaaaca	ttgacgacac	540
atgagtcctt	atngctccgc	caggccctta	ctggttggn	acnagcttca	ttgtnnccac	600

cgtggaatct gggaacatcn tgttgtagtg gcaccacana gggnttttgn gacaatcaca
ntagatgaga ttntgg

660
676

<210> 17
<211> 73
<212> PRT
<213> Triticum aestivum

<400> 17
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1 5 10 15
Arg Asp Leu Thr Leu Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala Asn
20 25 30
Thr Cys Cys Phe Val Asn Lys Val Thr Gly Val Lys Ser Asn Gly Thr
35 40 45
Lys Asn Phe Ile Val Val Asp Gly Ser Met Ala Glu Leu Ile Arg Pro
50 55 60
Ser Leu Tyr Gly Ala Tyr Gln His Ile
65 70

<210> 18
<211> 544
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (465)

<220>
<221> unsure
<222> (524)

<220>
<221> unsure
<222> (537)

<400> 18
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aaacgcgtta tcccaaaagc ttttttttct gccctcaaaa ttcaaagcca ccacaaaacc 180
acgtgctctc agagcgggtc tctcgagaaa cgtgtcaaaa acctcggttg aggacacaaa 240
gaacgctcat tttcagcact gtttcaccaa atccgaagat gggatatctgt actgtgaggg 300
cctcaagggt catgacatca tggaaatctgt tgagagaaga cctttctatt tgtacagcaa 360
gccccagata actaggaatg ttgaagccta caaggatgca ttggaagggt tgaactccat 420
aattggttat gccattaagg ccaataataa cttgaagatt ttggnacatt tgaggcactt 480
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gttc 544

<210> 19
<211> 62

<212> PRT

<213> Glycine max

<220>

<221> UNSURE

<222> (44)

<400> 19

Arg Arg Pro Phe Tyr Leu Tyr Ser Lys Pro Gln Ile Thr Arg Asn Val
1 5 10 15

Glu Ala Tyr Lys Asp Ala Leu Glu Gly Leu Asn Ser Ile Ile Gly Tyr
20 25 30

Ala Ile Lys Ala Asn Asn Asn Leu Lys Ile Leu Xaa His Leu Arg His
35 40 45

Leu Gly Cys Gly Ala Val Leu Val Ser Gly Asn Glu Leu Lys
50 55 60

<210> 20

<211> 371

<212> PRT

<213> Pseudomonas aeruginosa

<400> 20

Met Lys Arg Val Gly Leu Ile Gly Trp Arg Gly Met Val Gly Ser Val
1 5 10 15

Leu Ile Gln Arg Met Leu Glu Glu Arg Asp Phe Asp Leu Ile Glu Pro
20 25 30

Val Phe Phe Thr Thr Ser Asn Val Gly Ala Gln Ala Pro Glu Val Asp
35 40 45

Lys Asp Ile Ala Pro Leu Lys Asp Ala Tyr Ser Ile Asp Glu Leu Lys
50 55 60

Thr Leu Asp Val Ile Leu Thr Cys Gln Gly Gly Asp Tyr Thr Ser Glu
65 70 75 80

Val Phe Pro Lys Leu Arg Glu Ala Gly Trp Gln Gly Tyr Trp Ile Asp
85 90 95

Ala Ala Ser Ser Leu Arg Met Glu Asp Asp Ala Val Ile Val Leu Asp
100 105 110

Pro Val Asn Arg Lys Val Ile Asp Gln Ala Leu Asp Ala Gly Thr Arg
115 120 125

Asn Tyr Ile Gly Gly Asn Cys Thr Val Ser Leu Met Leu Met Ala Leu
130 135 140

Gly Gly Leu Phe Asp Ala Gly Leu Val Glu Trp Met Ser Ala Met Thr
145 150 155 160

Tyr Gln Ala Ala Ser Gly Ala Gly Ala Gln Asn Met Arg Asp Leu Leu
165 170 175

Lys Gln Met Gly Ala Ala His Ala Ser Val Ala Asp Asp Leu Ala Asn
 180 185 190
 Pro Ala Ser Ala Ile Leu Asp Ile Asp Arg Lys Val Ala Glu Thr Leu
 195 200 205
 Arg Ser Glu Ala Phe Pro Thr Glu His Phe Gly Ala Pro Leu Gly Gly
 210 215 220
 Ser Leu Ile Pro Trp Ile Asp Lys Glu Leu Ser Gln Arg Arg Gln Ser
 225 230 235 240
 Arg Glu Glu Trp Lys Ala Gln Ala Glu Thr Asn Lys Ile Leu Ala Arg
 245 250 255
 Phe Lys Asn Pro Ile Pro Val Asp Gly Ile Cys Val Arg Val Gly Ala
 260 265 270
 Met Arg Cys His Ser Gln Ala Leu Thr Ile Lys Leu Asn Lys Asp Val
 275 280 285
 Pro Leu Thr Asp Ile Glu Gly Leu Ile Arg Gln His Asn Pro Trp Val
 290 295 300
 Lys Leu Val Pro Asn His Arg Glu Val Ser Val Arg Glu Leu Thr Pro
 305 310 315 320
 Ala Ala Val Thr Gly Thr Leu Ser Val Pro Val Gly Arg Leu Arg Lys
 325 330 335
 Leu Asn Met Val Ser Gln Tyr Leu Gly Ala Phe Thr Val Gly Asp Gln
 340 345 350
 Leu Leu Trp Gly Ala Ala Glu Pro Leu Arg Arg Met Leu Arg Ile Leu
 355 360 365
 Leu Glu Arg
 370

<210> 21
 <211> 788
 <212> DNA
 <213> Zea mays

<400> 21
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 cgacttcgag gcgcccacga gcaagatgcg cgcgcgctg cccaggcagg tcgacgtcca 180
 gcagcacgtg cgcaactcca gccaggcagc ggcgctcgtg gcggcggtgc tgcaggggga 240
 cgcgggcctc atcggtccg cgatgtcgtc cgacggcatc gtggagccca ccagggcacc 300
 cctcatacct ggcattggcg cgttaaaggc ggcgccctg caagctggag cgctgggctg 360
 cacaattagc ggcgcgggcc ccacagtggg ggccgtcatc caaggggagg aaagggggga 420
 ggaggttgcc cgcaagatgg tggacgcgtt ctggagcgca ggcaagctca aggcgacagc 480
 aaccgtcgcg cagctcgata cccttgggtg cagggtcatc gccacgtcat ccttgaacta 540
 gcaaaaagatt cggaagtggt tactgcaatt gtatcaccaa acaaggaaga atgaaggga 600
 accccatgga tttgtatggt ttctcttctt tcttgcattt ttaggtggtt aattggcttt 660
 ggaataaatg agatggagga catcgctaga acaattctgt tccgtgggct gtaatttcaa 720
 tttgggctgg tttctttatc atgccatgga taattatgaa taaatttgag gtagtttggt 780
 aaaaaaaaa 788

<210> 22
 <211> 179
 <212> PRT
 <213> Zea mays

<400> 22

Asp Asn Ile Ala Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser
 1 5 10 15
 Tyr Asp Pro Phe His Leu Val Pro Leu Ser Phe Pro Pro Ala Leu Arg
 20 25 30
 Leu His Phe Val Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys
 35 40 45
 Met Arg Ala Ala Leu Pro Arg Gln Val Asp Val Gln Gln His Val Arg
 50 55 60
 Asn Ser Ser Gln Ala Ala Ala Leu Val Ala Ala Val Leu Gln Gly Asp
 65 70 75 80
 Ala Gly Leu Ile Gly Ser Ala Met Ser Ser Asp Gly Ile Val Glu Pro
 85 90 95
 Thr Arg Ala Pro Leu Ile Pro Gly Met Ala Ala Val Lys Ala Ala Ala
 100 105 110
 Leu Gln Ala Gly Ala Leu Gly Cys Thr Ile Ser Gly Ala Gly Pro Thr
 115 120 125
 Val Val Ala Val Ile Gln Gly Glu Glu Arg Gly Glu Glu Val Ala Arg
 130 135 140
 Lys Met Val Asp Ala Phe Trp Ser Ala Gly Lys Leu Lys Ala Thr Ala
 145 150 155 160
 Thr Val Ala Gln Leu Asp Thr Leu Gly Ala Arg Val Ile Ala Thr Ser
 165 170 175
 Ser Leu Asn

<210> 23
 <211> 601
 <212> DNA
 <213> Oryza sativa

<220>

<221> unsure
 <222> (433)

<220>

<221> unsure
 <222> (600)

<400> 23

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gctgccaaag	ccgttgacgc	cctcttcggc	tccttcctac	accaagatga	cctcgtcctc	180
gcgggcctcg	agtcgcgaaa	agccgtcagt	ggcttcacg	ccgacaacat	cgccccggcc	240

atcctcggcg	gcttcgtcct	cgccgcgcgc	tacgaccctt	tccacctcat	cccgtctctc	300
tccccacctg	ccctccgcct	ccacttcgtc	ctcgtcacgc	ccgacttcga	ggcgcccacc	360
aagcaagatg	cgtgccgcgc	tgcccaaaca	ggcggccgct	caccaagcac	gtccgcaact	420
ccagccaagc	ggncgcgctt	gtcgcgcgct	tgctgcaagg	ggacgccacc	ctcatcggtc	480
ccgcaatgtc	ctccgacggc	atcgtggagc	caacaaggcg	ccgctgattc	tggatggctg	540
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t						601

<210> 24
 <211> 82
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (56)

<220>
 <221> UNSURE
 <222> (57)

<400> 24
 Val Ser Ile His Leu Thr Lys Gly Leu Pro Leu Gly Ser Gly Leu Gly
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 20 25 30
 Phe Gly Ser Leu Leu His Gln Asp Asp Leu Val Leu Ala Gly Leu Glu
 35 40 45
 Ser Glu Lys Ala Val Ser Gly Xaa Xaa His Ala Asp Asn Ile Ala Pro
 50 55 60
 Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe His
 65 70 75 80
 Leu Ile

<210> 25
 <211> 1543
 <212> DNA
 <213> Glycine max

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gtcggccaat	attcgaaggg	agcccgaacc	tgtaacgacg	ctggtgaaag	cgtttgctcc	180
cgccacgggtg	gcgaatctag	gtccaggctt	cgacttccta	ggctgcgcgc	tggaaggact	240
cggagacatt	gtgtcgggtg	aggttgaccc	acaggttcac	cctggcgaga	tatgcatac	300
cgacatcagc	ggccacgccc	caaacaagct	cagcaaaaac	cctctctgga	actgcgcgcg	360
catgcgccgc	attgaagtca	tgaaaatgct	ctccattcga	tccgtcggcc	tctccctctc	420
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ggccgcgcgtg	gcggtgaacg	agctgttttg	gaagaaatta	agcgtggagg	agctggttct	540
ggcatcactg	aaatcggaag	agaagggtgc	ggggatatcac	gcggacaacg	tggcgccatc	600
gataatgggg	ggttttgtgc	tgatcgggag	ctaactgcgc	ctggagttga	tgccgttgaa	660
gtttccggca	gagaaggagc	tgtatttcgt	gctggtgacg	cctgagttcg	aggccccgac	720
gaagaagatg	cgggcagcgc	tgcctacgga	gatcgggatg	ccgcaccacg	tgtggaactg	780
cagccaggca	ggtgctcttg	tggcgctcgg	gctgcagggc	gacgtgggtg	ggttggggaa	840

ggcattgtcc	tctgacaaga	tcgttgagcc	aaggcggtgcc	cccttgattc	ctggcatgga	900
ggctgtcaag	agggctgcc	ttcaggccgg	tgcttttggc	tgtaccatca	gcggcgccgg	960
ccctaccgcc	gtcgccgtca	ttgaogacga	gcaaactgga	cacctcattg	ccaaacacat	1020
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gtcacatgta	tttgaaattt	gatctgatca	atgaagcagc	attctagtgt	ggaggtctga	1260
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agatgaataa	ttatgaaaga	cctagatcag	gtcagtgtta	tgggtgaactc	tgaagcatgt	1380
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<210> 26
 <211> 483
 <212> PRT
 <213> Glycine max

<400> 26

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			20					25						30	
Val	Asn	Ile	Arg	Arg	Glu	Pro	Glu	Pro	Val	Thr	Thr	Leu	Val	Lys	Ala
			35				40					45			
Phe	Ala	Pro	Ala	Thr	Val	Ala	Asn	Leu	Gly	Pro	Gly	Phe	Asp	Phe	Leu
	50					55					60				
Gly	Cys	Ala	Val	Asp	Gly	Leu	Gly	Asp	Ile	Val	Ser	Val	Lys	Val	Asp
65					70					75				80	
Pro	Gln	Val	His	Pro	Gly	Glu	Ile	Cys	Ile	Ser	Asp	Ile	Ser	Gly	His
				85				90						95	
Ala	Pro	Asn	Lys	Leu	Ser	Lys	Asn	Pro	Leu	Trp	Asn	Cys	Ala	Gly	Ile
		100					105						110		
Ala	Ala	Ile	Glu	Val	Met	Lys	Met	Leu	Ser	Ile	Arg	Ser	Val	Gly	Leu
		115					120					125			
Ser	Leu	Ser	Leu	Glu	Lys	Gly	Leu	Pro	Leu	Gly	Ser	Gly	Leu	Gly	Ser
	130					135					140				
Ser	Ala	Ala	Ser	Ala	Ala	Ala	Ala	Ala	Val	Ala	Val	Asn	Glu	Leu	Phe
145				150					155					160	
Gly	Lys	Lys	Leu	Ser	Val	Glu	Glu	Leu	Val	Leu	Ala	Ser	Leu	Lys	Ser
			165					170						175	
Glu	Glu	Lys	Val	Ser	Gly	Tyr	His	Ala	Asp	Asn	Val	Ala	Pro	Ser	Ile
		180					185					190			
Met	Gly	Gly	Phe	Val	Leu	Ile	Gly	Ser	Tyr	Ser	Pro	Leu	Glu	Leu	Met
	195						200					205			

Pro Leu Lys Phe Pro Ala Glu Lys Glu Leu Tyr Phe Val Leu Val Thr
 210 215 220
 Pro Glu Phe Glu Ala Pro Thr Lys Lys Met Arg Ala Ala Leu Pro Thr
 225 230 235 240
 Glu Ile Gly Met Pro His His Val Trp Asn Cys Ser Gln Ala Gly Ala
 245 250 255
 Leu Val Ala Ser Val Leu Gln Gly Asp Val Val Gly Leu Gly Lys Ala
 260 265 270
 Leu Ser Ser Asp Lys Ile Val Glu Pro Arg Arg Ala Pro Leu Ile Pro
 275 280 285
 Gly Met Glu Ala Val Lys Arg Ala Ala Ile Gln Ala Gly Ala Phe Gly
 290 295 300
 Cys Thr Ile Ser Gly Ala Gly Pro Thr Ala Val Ala Val Ile Asp Asp
 305 310 315 320
 Glu Gln Thr Gly His Leu Ile Ala Lys His Met Ile Asp Ala Phe Leu
 325 330 335
 His Val Gly Asn Leu Lys Ala Ser Ala Asn Val Lys Gln Leu Asp Arg
 340 345 350
 Leu Gly Ala Arg Arg Ile Pro Asn Thr Phe Ser Ser Leu Ser Leu Glu
 355 360 365
 Ala Cys Arg Phe Gln Glu Pro Asp Phe Phe Gln Leu Ala Arg Asn Thr
 370 375 380
 Leu Ser Ala Asp Arg Ser His Val Phe Glu Ile Ser Asp Gln Ser Ser
 385 390 395 400
 Ile Leu Val Trp Arg Ser Glu Gln Glu Lys His Thr Gln Ala Gly Ser
 405 410 415
 Ser Val Trp Val Val Glu Ile Ile Asp Glu Leu Lys Thr Ile Arg Ser
 420 425 430
 Val Leu Trp Thr Leu Lys His Val Leu Asp Phe Leu Cys Phe Val Phe
 435 440 445
 Ile Ile Phe Leu Ser Cys Tyr Leu Ser Gln Ser Ser Lys Arg Ser His
 450 455 460
 Phe Tyr Phe Leu Val Ser Leu Cys Leu Ile Leu Ala Phe Glu His Val
 465 470 475 480
 Leu Phe Leu

<210> 27
 <211> 438
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (271)

<220>
 <221> unsure
 <222> (421)

<220>
 <221> unsure
 <222> (425)

<400> 27
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 ccagcgctcc gctccactt cgtcctggtc acccccgact tcgaggcgcc cagcagcaag 180
 atgcgcgccg cgctgcccag gcaggtcgac gtccagcagc acgtgcgcaa ctccagccag 240
 gcagcggcgc tccgtggcgg cgggtgctgca nggggacgcc gggctcatcg gtccgcgatt 300
 tctccgacgg gcatcgctgga cccaccaagg aaccctcata cctggcatgg cggccgtaaa 360
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 ncagngaaga gaggggag 438

<210> 28
 <211> 84
 <212> DNA
 <213> Triticum aestivum

<400> 28
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 Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe
 20 25 30
 His Leu Val Pro Leu Ser Phe Pro Pro Ala Leu Arg Leu His Phe Val
 35 40 45
 Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys Met Arg Ala Ala
 50 55 60
 Leu Pro Arg Gln Val Asp Val Gln Gln His Val Arg Asn Ser Ser Gln
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 Ala Ala Ala Leu

<210> 29
 <211> 300
 <212> PRT
 <213> Methanococcus jannashii

<400> 29
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 Asn Leu Gly Val Gly Phe Asp Val Phe Gly Leu Cys Leu Lys Glu Pro
 20 25 30
 Tyr Asp Val Ile Glu Val Glu Ala Ile Asp Asp Lys Glu Ile Ile Ile
 35 40 45

Glu Val Asp Asp Lys Asn Ile Pro Thr Asp Pro Asp Lys Asn Val Ala
 50 55 60
 Gly Ile Val Ala Lys Lys Met Ile Asp Asp Phe Asn Ile Gly Lys Gly
 65 70 75 80
 Val Lys Ile Thr Ile Lys Lys Gly Val Lys Ala Gly Ser Gly Leu Gly
 85 90 95
 Ser Ser Ala Ala Ser Ser Ala Gly Thr Ala Tyr Ala Ile Asn Glu Leu
 100 105 110
 Phe Lys Leu Asn Leu Asp Lys Leu Lys Leu Val Asp Tyr Ala Ser Tyr
 115 120 125
 Gly Glu Leu Ala Ser Ser Gly Ala Lys His Ala Asp Asn Val Ala Pro
 130 135 140
 Ala Ile Phe Gly Gly Phe Thr Met Val Thr Asn Tyr Glu Pro Leu Glu
 145 150 155 160
 Val Leu His Ile Pro Ile Asp Phe Lys Leu Asp Ile Leu Ile Ala Ile
 165 170 175
 Pro Asn Ile Ser Ile Asn Thr Lys Glu Ala Arg Glu Ile Leu Pro Lys
 180 185 190
 Ala Val Gly Leu Lys Asp Leu Val Asn Asn Val Gly Lys Ala Cys Gly
 195 200 205
 Met Val Tyr Ala Leu Tyr Asn Lys Asp Lys Ser Leu Phe Gly Arg Tyr
 210 215 220
 Met Met Ser Asp Lys Val Ile Glu Pro Val Arg Gly Lys Leu Ile Pro
 225 230 235 240
 Asn Tyr Phe Lys Ile Lys Glu Glu Val Lys Asp Lys Val Tyr Gly Ile
 245 250 255
 Thr Ile Ser Gly Ser Gly Pro Ser Ile Ile Ala Phe Pro Lys Glu Glu
 260 265 270
 Phe Ile Asp Glu Val Glu Asn Ile Leu Arg Asp Tyr Tyr Glu Asn Thr
 275 280 285
 Ile Arg Thr Glu Val Gly Lys Gly Val Glu Val Val
 290 295 300

<210> 30

<211> 1362

<212> DNA

<213> Glycine max

<400> 30

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atgttacgga	attgattggt	aaaaccccat	tagtatatct	aaataaaactt	gcggatggtt	180
gtgttgcccg	ggttgctgct	aaactggagt	tgatggagcc	atgctctagt	gtgaaggaca	240

ggattgggta	tagtatgatt	gctgatgcag	aagagaaggg	acttatcaca	cctggaaaga	300
gtgtcctcat	tgagccaaca	agtggtaata	ctggcattgg	attagccttc	atggcagcag	360
ccaggggtta	caagctcata	attacaatgc	ctgcttctat	gagtcttgag	agaagaatca	420
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ctgttcagaa	ggctgaagag	atattggcta	agacgcccaa	tgctacata	cttcaacaat	540
ttgaaaaccc	tgccaatccc	aaggttcatt	atgaaaccac	tggtccagag	atatggaaag	600
gctccgatgg	gaaaattgat	gcatttgttt	ctgggatagg	cactggtggt	acaataacag	660
gtgctggaaa	atatcttaaa	gagcagaatc	cgaatataaa	gctgattggt	gtggaaccag	720
ttgaaagtcc	agtgtctctc	ggaggaaagc	ctgggccaca	caagattcaa	gggattggtg	780
ctgggttttat	ccctgggtgc	ttggaagtca	atcttcttga	tgaagttggt	caaatatcaa	840
gtgatgaagc	aatagaaact	gcaaagcttc	ttgcgcttaa	agaaggccta	tttgtgggaa	900
tatcttccgg	agctgcagct	gctgctgctt	ttcagattgc	aaaaagacca	gaaaatgccg	960
ggaagcttat	tgttgccgtt	tttcccagct	tccggggagag	gtacctgtcc	tccgtgctat	1020
ttgagtcagt	gagacgcgaa	gctgaaagca	tgacttttga	gccctgaatt	cccgtttaag	1080
gctctcacta	ctgaattttc	ttgttacttg	taccaggctt	taactagatt	gttagagtag	1140
tactgtttgt	gactctgact	ctaaaataaa	acttgctcca	aaagactagt	ttttcttgat	1200
gcccctggag	cgataatttt	gtgcctgcaa	cattaaaaag	tattcaaagt	tgcttataag	1260
taacatgttt	catcttttgt	tgttggtgag	acgaacacgg	atgaggtcat	aatactatgt	1320
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<210> 31

<211> 325

<212> PRT

<213> Glycine max

<400> 31

Met	Ala	Val	Glu	Arg	Ser	Gly	Ile	Ala	Lys	Asp	Val	Thr	Glu	Leu	Ile	1	5	10	15
Gly	Lys	Thr	Pro	Leu	Val	Tyr	Leu	Asn	Lys	Leu	Ala	Asp	Gly	Cys	Val	20	25	30	
Ala	Arg	Val	Ala	Ala	Lys	Leu	Glu	Leu	Met	Glu	Pro	Cys	Ser	Ser	Val	35	40	45	
Lys	Asp	Arg	Ile	Gly	Tyr	Ser	Met	Ile	Ala	Asp	Ala	Glu	Glu	Lys	Gly	50	55	60	
Leu	Ile	Thr	Pro	Gly	Lys	Ser	Val	Leu	Ile	Glu	Pro	Thr	Ser	Gly	Asn	65	70	75	80
Thr	Gly	Ile	Gly	Leu	Ala	Phe	Met	Ala	Ala	Ala	Arg	Gly	Tyr	Lys	Leu	85	90	95	
Ile	Ile	Thr	Met	Pro	Ala	Ser	Met	Ser	Leu	Glu	Arg	Arg	Ile	Ile	Leu	100	105	110	
Leu	Ala	Phe	Gly	Ala	Glu	Leu	Val	Leu	Thr	Asp	Pro	Ala	Lys	Gly	Met	115	120	125	
Lys	Gly	Ala	Val	Gln	Lys	Ala	Glu	Glu	Ile	Leu	Ala	Lys	Thr	Pro	Asn	130	135	140	
Ala	Tyr	Ile	Leu	Gln	Gln	Phe	Glu	Asn	Pro	Ala	Asn	Pro	Lys	Val	His	145	150	155	160
Tyr	Glu	Thr	Thr	Gly	Pro	Glu	Ile	Trp	Lys	Gly	Ser	Asp	Gly	Lys	Ile	165	170	175	

Asp Ala Phe Val Ser Gly Ile Gly Thr Gly Gly Thr Ile Thr Gly Ala
 180 185 190
 Gly Lys Tyr Leu Lys Glu Gln Asn Pro Asn Ile Lys Leu Ile Gly Val
 195 200 205
 Glu Pro Val Glu Ser Pro Val Leu Ser Gly Gly Lys Pro Gly Pro His
 210 215 220
 Lys Ile Gln Gly Ile Gly Ala Gly Phe Ile Pro Gly Val Leu Glu Val
 225 230 235 240
 Asn Leu Leu Asp Glu Val Val Gln Ile Ser Ser Asp Glu Ala Ile Glu
 245 250 255
 Thr Ala Lys Leu Leu Ala Leu Lys Glu Gly Leu Phe Val Gly Ile Ser
 260 265 270
 Ser Gly Ala Ala Ala Ala Ala Ala Phe Gln Ile Ala Lys Arg Pro Glu
 275 280 285
 Asn Ala Gly Lys Leu Ile Val Ala Val Phe Pro Ser Phe Gly Glu Arg
 290 295 300
 Tyr Leu Ser Ser Val Leu Phe Glu Ser Val Arg Arg Glu Ala Glu Ser
 305 310 315 320
 Met Thr Phe Glu Pro
 325

<210> 32
 <211> 325
 <212> PRT
 <213> Citrullus lanatus

<400> 32
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 Gly Asn Thr Pro Leu Val Tyr Leu Asn Arg Val Val Asp Gly Cys Val
 20 25 30
 Ala Arg Val Ala Ala Lys Leu Glu Met Met Glu Pro Cys Ser Ser Val
 35 40 45
 Lys Asp Arg Ile Gly Tyr Ser Met Ile Ser Asp Ala Glu Asn Lys Gly
 50 55 60
 Leu Ile Thr Pro Gly Glu Ser Val Leu Ile Glu Pro Thr Ser Gly Asn
 65 70 75 80
 Thr Gly Ile Gly Leu Ala Phe Ile Ala Ala Ala Lys Gly Tyr Arg Leu
 85 90 95
 Ile Ile Cys Met Pro Ala Ser Met Ser Leu Glu Arg Arg Thr Ile Leu
 100 105 110
 Arg Ala Phe Gly Ala Glu Leu Val Leu Thr Asp Pro Ala Arg Gly Met
 115 120 125

Lys Gly Ala Val Gln Lys Ala Glu Glu Ile Lys Ala Lys Thr Pro Asn
 130 135 140
 Ser Tyr Ile Leu Gln Gln Phe Glu Asn Pro Ala Asn Pro Lys Ile His
 145 150 155 160
 Tyr Glu Thr Thr Gly Pro Glu Ile Trp Arg Gly Ser Gly Gly Lys Ile
 165 170 175
 Asp Ala Leu Val Ser Gly Ile Gly Thr Gly Gly Thr Val Thr Gly Ala
 180 185 190
 Gly Lys Tyr Leu Lys Glu Gln Asn Pro Asn Ile Lys Leu Tyr Gly Val
 195 200 205
 Glu Pro Val Glu Ser Ala Ile Leu Ser Gly Gly Lys Pro Gly Pro His
 210 215 220
 Lys Ile Gln Gly Ile Gly Ala Gly Phe Ile Pro Gly Val Leu Asp Val
 225 230 235 240
 Asn Leu Leu Asp Glu Val Ile Gln Val Ser Ser Glu Glu Ser Ile Glu
 245 250 255
 Thr Ala Lys Leu Leu Ala Leu Lys Glu Gly Leu Leu Val Gly Ile Ser
 260 265 270
 Ser Gly Ala Ala Ala Ala Ala Ala Ile Arg Ile Ala Lys Arg Pro Glu
 275 280 285
 Asn Ala Gly Lys Leu Ile Val Ala Val Phe Pro Ser Phe Gly Glu Arg
 290 295 300
 Tyr Leu Ser Thr Val Leu Phe Glu Ser Val Lys Arg Glu Thr Glu Asn
 305 310 315 320
 Met Val Phe Glu Pro
 325

<210> 33
 <211> 789
 <212> DNA
 <213> Zea mays

<400> 33

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tcccgctcta	tagaactggg	agctgatatc	gtgatgcact	cggctaccaa	atztatagcg	120
ggacatagtg	atcttatggc	tgggaattott	gcagtgaagg	gtgagagttt	ggctaaagag	180
gtagggtttc	tgcaaaatgc	tgaagggtcg	ggtctggcac	cttttgactg	ctggctttgc	240
ttgaggggaa	tcaaaaccat	ggctctgcgg	gtggagaaac	aacaggctaa	tgcccagaag	300
attgctgaat	tcctggcgtc	tcacccgagg	gtcaagcaag	taaaactacgc	tgggcttcct	360
gaccatcctg	ggcgagcttt	acaactattcc	caggcaaagg	gagcgggctc	tgttctcagt	420
ttttcaccg	gctcactggc	cctctcaaag	cacgtcgtgg	agaccaccaa	gtacttcagc	480
gtaacagtca	gcttcgggag	cgtgaagtcc	ctcatcagcc	tgccgtgctt	catgtcccac	540
gcatcaatcc	ctgcctcggg	ccgcgaggag	cgtggcctaa	ccgacgacct	cgtccggata	600
tcggtcgga	tcgaggatgt	cgaggacctc	atcgccgatc	tggaccgcgc	gctcagaact	660
ggcccgggtg	agacatcgcc	gacaccttagg	tcatgtcaag	ctatcttttg	atgattcatt	720
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aaaactcga						789

<210> 34
 <211> 223
 <212> PRT
 <213> Zea mays

<400> 34

Ile Ala His Ser His Gly Ala Leu Val Leu Val Asp Asn Ser Ile Met
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Ser Pro Val Leu Ser Arg Pro Ile Glu Leu Gly Ala Asp Ile Val Met
 20 25 30

His Ser Ala Thr Lys Phe Ile Ala Gly His Ser Asp Leu Met Ala Gly
 35 40 45

Ile Leu Ala Val Lys Gly Glu Ser Leu Ala Lys Glu Val Gly Phe Leu
 50 55 60

Gln Asn Ala Glu Gly Ser Gly Leu Ala Pro Phe Asp Cys Trp Leu Cys
 65 70 75 80

Leu Arg Gly Ile Lys Thr Met Ala Leu Arg Val Glu Lys Gln Gln Ala
 85 90 95

Asn Ala Gln Lys Ile Ala Glu Phe Leu Ala Ser His Pro Arg Val Lys
 100 105 110

Gln Val Asn Tyr Ala Gly Leu Pro Asp His Pro Gly Arg Ala Leu His
 115 120 125

Tyr Ser Gln Ala Lys Gly Ala Gly Ser Val Leu Ser Phe Leu Thr Gly
 130 135 140

Ser Leu Ala Leu Ser Lys His Val Val Glu Thr Thr Lys Tyr Phe Ser
 145 150 155 160

Val Thr Val Ser Phe Gly Ser Val Lys Ser Leu Ile Ser Leu Pro Cys
 165 170 175

Phe Met Ser His Ala Ser Ile Pro Ala Ser Val Arg Glu Glu Arg Gly
 180 185 190

Leu Thr Asp Asp Leu Val Arg Ile Ser Val Gly Ile Glu Asp Val Glu
 195 200 205

Asp Leu Ile Ala Asp Leu Asp Arg Ala Leu Arg Thr Gly Pro Val
 210 215 220

<210> 35
 <211> 547
 <212> DNA
 <213> Oryza sativa

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<221> unsure

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<400> 35						
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tatatggtgg	ctcagaccgt	ctgctctcac	aagttgcccc	gagacatggg	attgtagtaa	180
aacgaattga	tacaaccaaa	attagtggag	taacttctgc	aattggggcc	ttggactaaa	240
ctaagtatgg	ctttgaaaan	cccaccatcc	cogtcctaca	aattactgga	tataaagaaa	300
atagcnagag	atagtcatta	caatggggct	ccttgtttta	agtagacaac	agcacatgtc	360
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aaccaattta	tnctgggcat	agcgtnctta	tggcnnggat	ccttgccggg	aaggggtgaa	480
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gccggtt						547

<210> 36
 <211> 75
 <212> PRT
 <213> Oryza sativa

<400> 36
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 Gly Met Ala Ala Leu Ala Ala Val Thr His Leu Leu Lys Ser Gly Gln
 20 25 30
 Glu Ile Val Ala Gly Glu Asp Ile Tyr Gly Gly Ser Asp Arg Leu Leu
 35 40 45
 Ser Gln Val Ala Pro Arg His Gly Ile Val Val Lys Arg Ile Asp Thr
 50 55 60
 Thr Lys Ile Ser Glu Val Thr Ser Ala Ile Gly
 65 70 75

<210> 37
 <211> 1733
 <212> DNA
 <213> Glycine max

<400> 37
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 cttcagtcce tcgtcattga tcgttacgct cagagcacia ctgctgcaac caggtgggag 180
 tgcttggggg ttaacaagtc agaaaatttc agtaccaaga gagtgttgcg tgcagagggg 240
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 ttgggtggatg atgctgccat gagcttaagt gaagaggatt taggggagcc tagtatttca 360
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 agaagtggaa atcctactcg tgatgcttta gaaagtttac tagcaaagct tgataaagca 540
 gatagagccc tgtgcttcac cagtggaaat gctgctttga gtgctgttgt tcgtcttggt 600
 ggaactgggt aggaattgt caccggagat gatgtatatg gtggctcaga taggttgctg 660
 tctcaagtag ttccaaggac actcaggact aagcttggtg gtgaaacggg taaatacatg tgatctagat 720
 gaggttgctg ctgccattgg actcaggact aagcttggtg ggcttgagag tccaaccaat 780
 cctcggttc aaatttctga tattcgaaaa atatcagaga tggctcattc acatggtgct 840
 cttgtgttag tggacaatag tataatgtca cctgtgttgt ctccagccatt ggaacttgga 900
 gcagatattg tcatgcactc agctacaaaa ttatttgctg gacatagtga cattatggct 960
 ggtgtgcttg ctgtgaaggg tgaaaagttg ggaaaggaaa tgtatttctt gcaaaatgca 1020
 gaggggttcag gcttagcacc atttgactgt tggctttggt tgcgaggaat caagacaatg 1080
 gccctgcgaa ttgaaaagca acaggataac gcacagaaga ttgcagagtt ccttgccctc 1140
 catcctcgag tgaaggaggt gaattatgct ggcttgctg gtcctcctgg tcgtgattta 1200
 cactattctc aggcaaaggg tgcaggatct gtgcttagct tcttgactgg ttcattggca 1260
 ctttcaaagc atattgttga aactaccaa tacttcagta taaccgtcag ctttgggagt 1320
 gtgaagtcce tcattagcat gccatgcttt atgtcacatg caagcatacc tgctgcagtt 1380
 cgcgaggcca gaggtttaac tgaagatctt gtacgaatat ctgtgggaat tgaggatgtg 1440
 aatgatctca ttgctgatct tggcaatgca cttagaactg gacctcttta atgtcttctc 1500
 cccccccca cccaaaaaga aaaaaattca tccttaagaa gttggattag catgttgagg 1560
 atttgggagc attgctatcc tgtcttttga ttcttgagag tggaaacttg aagtgttgct 1620
 tatgtgcatg taataaaatc aatatttctt gtaattttgt tgtaacaatt gttatcctta 1680
 ccttgcaata tcatgtcata caagttacta ttgaaaaaaa aaaaaaaaaa aaa 1733

<210> 38
 <211> 467
 <212> PRT
 <213> Glycine max

<400> 38

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Ile Asp Arg Tyr Ala Gln Ser Thr Thr Ala Ala Thr Arg Trp Glu Cys
20 25 30

Leu Gly Phe Asn Lys Ser Glu Asn Phe Ser Thr Lys Arg Val Leu Arg
35 40 45

Ala Glu Gly Phe Lys Leu Asn Cys Leu Val Glu Asn Arg Glu Met Glu
50 55 60

Val Glu Ser Ser Ser Ser Ser Leu Val Asp Asp Ala Ala Met Ser Leu
65 70 75 80

Ser Glu Glu Asp Leu Gly Glu Pro Ser Ile Ser Thr Met Val Met Asn
85 90 95

Phe Glu Ser Lys Phe Asp Pro Phe Gly Ala Ile Ser Thr Pro Leu Tyr
100 105 110

Gln Thr Ala Thr Phe Lys Gln Pro Ser Ala Ile Glu Asn Gly Pro Tyr
115 120 125

Asp Tyr Thr Arg Ser Gly Asn Pro Thr Arg Asp Ala Leu Glu Ser Leu
130 135 140

Leu Ala Lys Leu Asp Lys Ala Asp Arg Ala Leu Cys Phe Thr Ser Gly
145 150 155 160

Met Ala Ala Leu Ser Ala Val Val Arg Leu Val Gly Thr Gly Glu Glu
165 170 175

Ile Val Thr Gly Asp Asp Val Tyr Gly Gly Ser Asp Arg Leu Leu Ser
180 185 190

Gln Val Val Pro Arg Thr Gly Ile Val Val Lys Arg Val Asn Thr Cys
195 200 205

Asp Leu Asp Glu Val Ala Ala Ala Ile Gly Leu Arg Thr Lys Leu Val
210 215 220

Trp Leu Glu Ser Pro Thr Asn Pro Arg Leu Gln Ile Ser Asp Ile Arg
225 230 235 240

Lys Ile Ser Glu Met Ala His Ser His Gly Ala Leu Val Leu Val Asp
245 250 255

Asn Ser Ile Met Ser Pro Val Leu Ser Gln Pro Leu Glu Leu Gly Ala
260 265 270

Asp Ile Val Met His Ser Ala Thr Lys Phe Ile Ala Gly His Ser Asp
275 280 285

Ile Met Ala Gly Val Leu Ala Val Lys Gly Glu Lys Leu Gly Lys Glu
290 295 300

Met Tyr Phe Leu Gln Asn Ala Glu Gly Ser Gly Leu Ala Pro Phe Asp
305 310 315 320

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gattatacta gaagtggcaa ccctactcgt gatgttctcc agagccttat ggctaagctc 180
gagaaggcag accaagcatt ctgcttcact agtgggatgg catcactggg ctgcagtaac 240
acacctcctt caggctggac aagaaatagt tgctggagag gacatatatg gtgggtctgat 300
cgtctgctct cacaagttgt cccaagaaat ggaattgtag taaaacgggt cgatacaact 360
aaaattaacg acgtgactgc tgcacgggac ccttgactan actagtgttg ttgaaancca 420
caatcctcgt caacaattac tgtataagaa atctcagggg tactcatcca tggggactgg 480
tttgngngca annttcatgt cccanggcta cctggccnat aaantggggn antatgggag 540
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<213> Triticum aestivum

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Ser Ala Thr Val Asn Gly Ala Tyr Asp Tyr Thr Arg Ser Gly Asn Pro
 35 40 45

Thr Arg Asp Val Leu Gln Ser Leu Met Ala Lys Leu Glu Lys Ala Asp
 50 55 60

Gln Ala Phe Cys Phe Thr Ser Gly Met Ala Ser Leu Xaa Ala Val Thr
 65 70 75 80

His Leu Leu Gln Ala Gly Gln Glu Ile Val Ala Gly Glu Asp Ile Tyr
 85 90 95

Gly Gly Xaa Asp Arg Leu Leu Ser Gln Val Val Pro Arg Asn Gly Ile
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Ser Asp Pro
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<211> 464

<212> PRT

<213> Arabidopsis thaliana

<400> 41

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 35 40 45

Asn Ser Phe Lys Leu Asn Cys Val Met Glu Lys Ser Val Asp Gly Gln
 50 55 60

Thr His Ser Thr Val Asn Asn Thr Thr Asp Ser Leu Asn Thr Met Asn
 65 70 75 80

Ile Lys Glu Glu Ala Ser Val Ser Thr Leu Leu Val Asn Leu Asp Asn
 85 90 95

Lys Phe Asp Pro Phe Asp Ala Met Ser Thr Pro Leu Tyr Gln Thr Ala
 100 105 110

Thr	Phe	Lys	Gln	Pro	Ser	Ala	Ile	Glu	Asn	Gly	Pro	Tyr	Asp	Tyr	Thr	115	120	125	
Arg	Ser	Gly	Asn	Pro	Thr	Arg	Asp	Ala	Leu	Glu	Ser	Leu	Leu	Ala	Lys	130	135	140	
Leu	Asp	Lys	Ala	Asp	Arg	Ala	Phe	Cys	Phe	Thr	Ser	Gly	Met	Ala	Ala	145	150	155	160
Leu	Ser	Ala	Val	Thr	His	Leu	Ile	Lys	Asn	Gly	Glu	Glu	Ile	Val	Ala	165	170	175	
Gly	Asp	Asp	Val	Tyr	Gly	Gly	Ser	Asp	Arg	Leu	Leu	Ser	Gln	Val	Val	180	185	190	
Pro	Arg	Ser	Gly	Val	Val	Val	Lys	Arg	Val	Asn	Thr	Thr	Lys	Leu	Asp	195	200	205	
Glu	Val	Ala	Ala	Ala	Ile	Gly	Pro	Gln	Thr	Lys	Leu	Val	Trp	Leu	Glu	210	215	220	
Ser	Pro	Thr	Asn	Pro	Arg	Gln	Gln	Ile	Ser	Asp	Ile	Arg	Lys	Ile	Ser	225	230	235	240
Glu	Met	Ala	His	Ala	Gln	Gly	Ala	Leu	Val	Leu	Val	Asp	Asn	Ser	Ile	245	250	255	
Met	Ser	Pro	Val	Leu	Ser	Arg	Pro	Leu	Glu	Leu	Gly	Ala	Asp	Ile	Val	260	265	270	
Met	His	Ser	Ala	Thr	Lys	Phe	Ile	Ala	Gly	His	Ser	Asp	Val	Met	Ala	275	280	285	
Gly	Val	Leu	Ala	Val	Lys	Gly	Glu	Lys	Leu	Ala	Lys	Glu	Val	Tyr	Phe	290	295	300	
Leu	Gln	Asn	Ser	Glu	Gly	Ser	Gly	Leu	Ala	Pro	Phe	Asp	Cys	Trp	Leu	305	310	315	320
Cys	Leu	Arg	Gly	Ile	Lys	Thr	Met	Ala	Leu	Arg	Ile	Glu	Lys	Gln	Gln	325	330	335	
Glu	Asn	Ala	Arg	Lys	Ile	Ala	Met	Tyr	Leu	Ser	Ser	His	Pro	Arg	Val	340	345	350	
Lys	Lys	Val	Tyr	Tyr	Ala	Gly	Leu	Pro	Asp	His	Pro	Gly	His	His	Leu	355	360	365	
His	Phe	Ser	Gln	Ala	Lys	Gly	Ala	Gly	Ser	Val	Phe	Ser	Phe	Ile	Thr	370	375	380	
Gly	Ser	Val	Ala	Leu	Ser	Lys	His	Leu	Val	Glu	Thr	Thr	Lys	Tyr	Phe	385	390	395	400
Ser	Ile	Ala	Val	Ser	Phe	Gly	Ser	Val	Lys	Ser	Leu	Ile	Ser	Met	Pro	405	410	415	
Cys	Phe	Met	Ser	His	Ala	Ser	Ile	Pro	Ala	Glu	Val	Arg	Glu	Ala	Arg	420	425	430	

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Asp Asp Leu Ile Ser Asp Leu Asp Ile Ala Phe Lys Thr Phe Pro Leu
450 455 460

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<212> DNA
<213> Zea mays

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gtcgacaaca gctccgcgtt ccggatggag cccgaggtgc cgctcgtcat ccccgaggtc 180
aaccgagagg ccatggcgaa cgctccgcctc gggcaggggg cgattgtggc aaatccgaat 240
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ctcaagctgc agactcagga ggtcttggaa ggggaaggcg caacatgcaa cattttcaaa 420
cagcagtatg cttttaatat attctcacac aatgcaccag ttcttgagaa tgggtataac 480
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<213> Zea mays

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Ala Val Ala Ser Gly Ala Val Val Val Asp Asn Ser Ser Ala Phe Arg
35 40 45
Met Glu Pro Glu Val Pro Leu Val Ile Pro Glu Val Asn Pro Glu Ala
50 55 60
Met Ala Asn Val Arg Leu Gly Gln Gly Ala Ile Val Ala Asn Pro Asn
65 70 75 80
Cys Ser Thr Ile Ile Cys Leu Met Ala Ala Thr Pro Leu His Arg His
85 90 95
Ala Lys Val Leu Arg Met Val Val Ser Thr Tyr Gln Ala Ala Ser Gly
100 105 110

Ala Gly Ala Ala Ala Met Glu Glu Leu Lys Leu Gln Thr Gln Glu Val
115 120 125

Leu Glu Gly Lys Ala Pro Thr Cys Asn Ile Phe Lys Gln Gln Tyr Ala
130 135 140

Phe Asn Ile Phe Ser His Asn Ala Pro Val Leu Glu Asn Gly Tyr Asn
145 150 155 160

Glu Glu Glu Met Lys Met Val Lys Glu Thr Arg Lys Ile Trp Asn Asp
165 170 175

Lys Glu Val Lys Val Thr Ala Thr Cys Ile Arg Val Pro Val Met Arg
180 185 190

Ala His Ala Glu Ser Val Asn Leu Gln Phe Glu Lys Pro Leu Asp Glu
195 200 205

Asp Thr Ala Arg Glu Ile Leu Arg Ala Ala Pro Gly Val Thr Ile Ile
210 215 220

Asp Asp Arg Ala Ser Asn Arg Phe Pro Thr Pro Leu Glu Val Ser Asp
225 230 235 240

Lys Asp Asp Val Ala Val Gly Arg Ile Arg Gln Asp Leu Ser Leu Asp
245 250 255

Gly Asn Arg Gly Leu Asp Ile Phe Val Cys Gly Asp Gln Ile Arg Lys
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Gly Ala Ala Leu Asn Ala Val Gln Ile Ala Glu Met Leu Leu Lys
275 280 285

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ctcaaacttc aaactcaaga ggtcttggcg gggaaagcac caacatgcaa cattttcagt 720
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 <213> Oryza sativa

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 Ala Val Gly Gln Glu Phe Leu Arg Val Ile Ser Ser Arg Gly Phe Pro
 50 55 60
 Tyr Arg Ser Leu Arg Leu Leu Ala Ser Glu Arg Ser Ala Gly Lys Arg
 65 70 75 80
 Leu Pro Phe Glu Gly Gln Glu Tyr Thr Val Gln Asp Leu Ala Ala Pro
 85 90 95
 Gly Ala Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly Gly
 100 105 110
 Val Ser Arg Ala His Ala Pro Ala Ala Val Ala Ser Gly Ala Val Val
 115 120 125
 Val Asp Asn Ser Ser Ala Phe Arg Met Asp Pro Glu Val Pro Leu Val
 130 135 140
 Ile Pro Glu Val Asn Pro Glu Ala Met Ala His Val Arg Leu Gly Lys
 145 150 155 160
 Gly Ala Ile Val Ala Asn Pro Asn Cys Ser Thr Ile Ile Cys Leu Met
 165 170 175
 Ala Ala Thr Pro Leu His Arg His Ala Lys Val Val Arg Met Val Val
 180 185 190
 Ser Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala Met Glu Glu
 195 200 205
 Leu Lys Leu Gln Thr Gln Glu Val Leu Ala Gly Lys Ala Pro Thr Cys
 210 215 220
 Asn Ile Phe Ser Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala
 225 230 235 240
 Pro Ile Val Glu Asn Gly Tyr Asn Glu Glu Glu Met Lys Met Val Lys
 245 250 255
 Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Lys Val Thr Ala Thr
 260 265 270

Cys Ile Arg Val Pro Val Met Arg Ala His Ala Glu Ser Val Asn Leu
 275 280 285

Gln Phe Glu Lys Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg
 290 295 300

Ala Ala Glu Gly Val Thr Ile Ile Asp Asp Arg Ala Ser Asn Arg Phe
 305 310 315 320

Pro Thr Pro Leu Glu Val Ser Asp Lys Asp Asp Val Ala Val Gly Arg
 325 330 335

Ile Arg Gln Asp Leu Ser Gln Asp Asp Asn Lys Gly Leu Asp Ile Phe
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Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala Val Gln
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Ile Ala Glu Met Leu Leu Lys
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 <211> 1391
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 cctcccatcg ccgtcgtggg cgtcacccgc gccgtcggcc aggagtccct ctccgtcctc 180
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 aaggtgcctt tggtaatcc cgaagtgaac cccgaagcaa tgcaaaacat caaagccgga 480
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 <211> 377
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 <213> Glycine max

<400> 47

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Arg Met Ser Leu Arg Glu Asn Gly Pro Ser Ile Ala Val Val Gly Val
35 40 45
Thr Gly Ala Val Gly Gln Glu Phe Leu Ser Val Leu Ser Asp Arg Asp
50 55 60
Phe Pro Tyr Arg Ser Ile His Met Leu Ala Ser Lys Arg Ser Ala Gly
65 70 75 80
Arg Arg Ile Thr Phe Glu Asp Arg Asp Tyr Val Val Gln Glu Leu Thr
85 90 95
Pro Glu Ser Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly
100 105 110
Ser Ile Ser Lys His Phe Gly Pro Ile Ala Val Asn Arg Gly Thr Val
115 120 125
Val Val Asp Asn Ser Ser Ala Phe Arg Met Asn Glu Lys Val Pro Leu
130 135 140
Val Ile Pro Glu Val Asn Pro Glu Ala Met Gln Asn Ile Lys Ala Gly
145 150 155 160
Thr Gly Lys Gly Ala Leu Ile Ala Asn Pro Asn Cys Ser Thr Ile Ile
165 170 175
Cys Leu Met Ala Ala Thr Pro Leu His Arg Arg Ala Lys Val Leu Arg
180 185 190
Met Val Val Ser Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala
195 200 205
Met Glu Glu Leu Glu Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro
210 215 220
Pro Thr Cys Lys Ile Phe Asn Arg Gln Tyr Ala Phe Asn Leu Phe Ser
225 230 235 240
His Asn Ala Ser Val Leu Ser Asn Gly Tyr Asn Glu Glu Glu Met Lys
245 250 255
Met Val Lys Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Lys Val
260 265 270
Thr Ala Thr Cys Ile Arg Val Pro Ile Met Arg Ala His Ala Glu Ser
275 280 285
Val Asn Leu Gln Phe Glu Arg Pro Leu Asp Glu Asp Thr Ala Arg Asp
290 295 300
Ile Leu Lys Asn Ala Pro Gly Val Val Val Ile Asp Asp Arg Glu Ser
305 310 315 320

Asn His Phe Pro Thr Pro Leu Glu Val Ser Asn Lys Asp Asp Val Ala
 325 330 335

Val Gly Arg Ile Arg Gln Asp Leu Ser Gln Asp Gly Asn Gln Gly Leu
 340 345 350

Asp Ile Phe Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn
 355 360 365

Ala Ile Gln Ile Ala Glu Met Leu Leu
 370 375

<210> 48
 <211> 1470
 <212> DNA
 <213> Glycine max

<400> 48
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 tggcttcact ctctgttttg cgccacaacc acctcttctc gggcccccct ccggccccgc 120
 ccaagcccac ctctctctcc tcttcagga tccgaatgtc cctccgcgag aacggccccct 180
 ccatcgccgt cgtggggtgc accggcgccg tcggccagga gttcctctcc gtcctctccg 240
 accgagactt cccctaccgc tccattcata tgctggcttc caagcgctcc gctggccgcc 300
 gcatcacctt cgaggacagg gactacgtcg tccaggagct cagcccgag agcttcgacg 360
 gtgtcgacat cgcgtcttc agcgccggcg gctccatcag caagcacttc ggccccatcg 420
 ccgtcaatcg tggaaacggtc gtggtcgaca acagctccgc gtttcggatg gacgagaagg 480
 tgcttttggg aattcccgaa gtgaaccccg aagcaatgca aaacatcaaa gccggaacgg 540
 gaaagggcgc actcattgct aaccctaatt gctccaccat tagatgcttg aaggctgcta 600
 cccctcttca tcgacgtgcc aagggtgttac gtatggttgt tagtacctat caggtgcga 660
 gtggtgctgg tgctgctgca atggaagagc ttgagctgca aactcgtgag gtgttggaag 720
 gaaaaccacc cacttgtaaa atatttaacc gacagtatgc ttttaatcta ttctcacata 780
 atgctgtctg tctttcaaat ggatataatg aagaagaaat gaaaatggtc aaggagacca 840
 ggaaaatctg gaatgacaag gatgttaaag taactgccac atgcatacga gttcccatca 900
 tgcgagctca tgctgagagt gtgaatcttc aatttgaaag accccttgat gaggacactg 960
 caagagatat tctgaaaaat gctccagggt tagtggttat tgatgatcgt gaatccaatc 1020
 attttcttac tccactggaa gtgtcaaaca aggatgatgt tgctgttggg aggattcggc 1080
 aggacctgtc tcaggatggg aatcaagggt tggacatctt tgtatgtggg gatcaaatto 1140
 gcaagggagc tgcacttaac gcaatccaga ttgctgagat gttgctatga gttctggttt 1200
 ttcaaggatc tggacttaaa agattatgct tcttttgaaa cagttttgta tgtgctagtt 1260
 gtatgtgggt attcatttct tttgtgatgt ttaactagtc caagtatctt ttcaacgatg 1320
 tggtagcaca ctagctggaa acagtttttt taaggctctg gtgcgtaata tctgcaatcc 1380
 ttttcaccgg gaataacaag cactggtttt ggcaaaaaaa aaaaaaaaaa aaaaaaaaaa 1440
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa . 1470

<210> 49
 <211> 376
 <212> PRT
 <213> Glycine max

<400> 49
 Met Ala Ser Leu Ser Val Leu Arg His Asn His Leu Phe Ser Gly Pro
 1 5 10 15
 Leu Pro Ala Arg Pro Lys Pro Thr Ser Ser Ser Ser Ser Arg Ile Arg
 20 25 30
 Met Ser Leu Arg Glu Asn Gly Pro Ser Ile Ala Val Val Gly Val Thr
 35 40 45

Gly Ala Val Gly Gln Glu Phe Leu Ser Val Leu Ser Asp Arg Asp Phe
 50 55 60
 Pro Tyr Arg Ser Ile His Met Leu Ala Ser Lys Arg Ser Ala Gly Arg
 65 70 75 80
 Arg Ile Thr Phe Glu Asp Arg Asp Tyr Val Val Gln Glu Leu Thr Pro
 85 90 95
 Glu Ser Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly Ser
 100 105 110
 Ile Ser Lys His Phe Gly Pro Ile Ala Val Asn Arg Gly Thr Val Val
 115 120 125
 Val Asp Asn Ser Ser Ala Phe Arg Met Asp Glu Lys Val Pro Leu Val
 130 135 140
 Ile Pro Glu Val Asn Pro Glu Ala Met Gln Asn Ile Lys Ala Gly Thr
 145 150 155 160
 Gly Lys Gly Ala Leu Ile Ala Asn Pro Asn Cys Ser Thr Ile Arg Cys
 165 170 175
 Leu Lys Ala Ala Thr Pro Leu His Arg Arg Ala Lys Val Leu Arg Met
 180 185 190
 Val Val Ser Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Met
 195 200 205
 Glu Glu Leu Glu Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro Pro
 210 215 220
 Thr Cys Lys Ile Phe Asn Arg Gln Tyr Ala Phe Asn Leu Phe Ser His
 225 230 235 240
 Asn Ala Ser Val Leu Ser Asn Gly Tyr Asn Glu Glu Glu Met Lys Met
 245 250 255
 Val Lys Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Lys Val Thr
 260 265 270
 Ala Thr Cys Ile Arg Val Pro Ile Met Arg Ala His Ala Glu Ser Val
 275 280 285
 Asn Leu Gln Phe Glu Arg Pro Leu Asp Glu Asp Thr Ala Arg Asp Ile
 290 295 300
 Leu Lys Asn Ala Pro Gly Val Val Val Ile Asp Asp Arg Glu Ser Asn
 305 310 315 320
 His Phe Pro Thr Pro Leu Glu Val Ser Asn Lys Asp Asp Val Ala Val
 325 330 335
 Gly Arg Ile Arg Gln Asp Leu Ser Gln Asp Gly Asn Gln Gly Leu Asp
 340 345 350
 Ile Phe Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala
 355 360 365

Ile Gln Ile Ala Glu Met Leu Leu
370 375

<210> 50
<211> 1609
<212> DNA
<213> Triticum aestivum

<400> 50
caccaccacc cacctaccca aatcccagcc gccctaaaac cctaggccgc caaaccgcgc 60
gccgccgcgc cgcgaatgca ggccgcgcga gccgtccacc ggccacacct cctcgcggcg 120
tccccgctcg ggggccgcgc cagccgcgcg ccctccacgg tccgcatggc gctccgcgag 180
gacggggcct ccgtggccat cgtgggcgcc accggcgccg tggggcagga gttcctccgc 240
gtcatcaccg cccgcgactt cccctaccgc agcctgcgcc tctcgccag cgagcgctcc 300
gcggggcaagc gcatcgactt cgagggccgg gactacaccg tccaggacct cgcggcgccg 360
ggggccttcg acggggtcga catcgcgctc ttcagcgccg gcgggagcat cagccgcgcc 420
cacgcgcccg ccgcccgcgc cagcggcgcc gtcgtcgtgg ataacagctc cgcctaccgg 480
atggaccccg acgtgccgct cgtcatcccg gaggttaacc ccgaggccat ggccgacgtc 540
cggctcggga aaggggctat tgtggccaac cccaactgtt ccaccatcat ctgcctcatg 600
gctgtcacgc cgctgcatcg ccacgccaaag gtgaaaagga tggttgtcag cacataccaa 660
gcagcaagtg gtgctggtgc tgcagccatg gaagaactca aacttcagac tcgagaggtc 720
ttggaaggaa agccaccaac ctgtaacatt ttcagtcaac agtatgcttt taatatattt 780
tcgcataatg cacctattgt tgaaaatggc tataatgagg aagagatgaa aatggtgaag 840
gagaccagaa aaatctggaa tgacaaggat gtaagagtaa ctgcaacttg tatacgggtt 900
cctacgatgc gcgcgcgatgc cgaaagcgtg aatctacagt ttgaaaagcc acttgatgag 960
gacactgcca gagaaatctt gagggcagct cctggtgtta ccattagtga cgaccgtgct 1020
gccaaaccgt tccctacacc actggaggta tcggataaag atgacgtatc agttggtagg 1080
attcgccagg acttgtcaca agatgataac agagggttgg agttatttgt ctgtggagac 1140
cagatacgta aaggcgccgc gctgaacgct gtgcagattg ctgaaatgct actgaagtga 1200
ccgccttttt accattgtct catgtgccac gttgctctat ccattgatgg attgatgtac 1260
tctagtcact ttcaaccagc ttttggtcgt cgtctttttt gtaatctgtc aacctagcag 1320
aagaagtgtg agacgggctt tagtcatctg ttgcacacaa aagtgcagcc acaagtttag 1380
aaaaggaggg ttttcacttg ttcggatttt gccttaggtt ggactttgtt gcaagtttgt 1440
cgtttgttct ttgaaagctg gtctgctgta actttacccc caaagccctc gagataacga 1500
ggcgtcctgt ggggacctaa aaaaaaaaaa aaaaaaaaaa aaaaaacccc aaaaaaaaaa 1560
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1609

<210> 51
<211> 374
<212> PRT
<213> Triticum aestivum

<400> 51
Met Gln Ala Ala Ala Ala Val His Arg Pro His Leu Leu Ala Ala Ser
1 5 10 15
Pro Leu Gly Gly Arg Ala Ser Arg Arg Pro Ser Thr Val Arg Met Ala
20 25 30
Leu Arg Glu Asp Gly Pro Ser Val Ala Ile Val Gly Ala Thr Gly Ala
35 40 45
Val Gly Gln Glu Phe Leu Arg Val Ile Thr Ala Arg Asp Phe Pro Tyr
50 55 60
Arg Ser Leu Arg Leu Leu Ala Ser Glu Arg Ser Ala Gly Lys Arg Ile
65 70 75 80
Asp Phe Glu Gly Arg Asp Tyr Thr Val Gln Asp Leu Ala Ala Pro Gly
85 90 95

Ala Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly Ser Ile
100 105 110

Ser Arg Ala His Ala Pro Ala Ala Val Ala Ser Gly Ala Val Val Val
115 120 125

Asp Asn Ser Ser Ala Tyr Arg Met Asp Pro Asp Val Pro Leu Val Ile
130 135 140

Pro Glu Val Asn Pro Glu Ala Met Ala Asp Val Arg Leu Gly Lys Gly
145 150 155 160

Ala Ile Val Ala Asn Pro Asn Cys Ser Thr Ile Ile Cys Leu Met Ala
165 170 175

Val Thr Pro Leu His Arg His Ala Lys Val Lys Arg Met Val Val Ser
180 185 190

Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala Met Glu Glu Leu
195 200 205

Lys Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro Pro Thr Cys Asn
210 215 220

Ile Phe Ser Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala Pro
225 230 235 240

Ile Val Glu Asn Gly Tyr Asn Glu Glu Glu Met Lys Met Val Lys Glu
245 250 255

Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Arg Val Thr Ala Thr Cys
260 265 270

Ile Arg Val Pro Thr Met Arg Ala His Ala Glu Ser Val Asn Leu Gln
275 280 285

Phe Glu Lys Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg Ala
290 295 300

Ala Pro Gly Val Thr Ile Ser Asp Asp Arg Ala Ala Asn Arg Phe Pro
305 310 315 320

Thr Pro Leu Glu Val Ser Asp Lys Asp Asp Val Ser Val Gly Arg Ile
325 330 335

Arg Gln Asp Leu Ser Gln Asp Asp Asn Arg Gly Leu Glu Leu Phe Val
340 345 350

Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala Val Gln Ile
355 360 365

Ala Glu Met Leu Leu Lys
370

<210> 52
<211> 340
<212> PRT
<213> Aquifex aeolicus

<400> 52

Met Gly Tyr Arg Val Ala Ile Val Gly Ala Thr Gly Glu Val Gly Arg
1 5 10 15

Thr Phe Leu Lys Val Leu Glu Glu Arg Asn Phe Pro Val Asp Glu Leu
20 25 30

Val Leu Tyr Ala Ser Glu Arg Ser Glu Gly Lys Val Leu Thr Phe Lys
35 40 45

Gly Lys Glu Tyr Thr Val Lys Ala Leu Asn Lys Glu Asn Ser Phe Lys
50 55 60

Gly Ile Asp Ile Ala Leu Phe Ser Ala Gly Gly Ser Thr Ser Lys Glu
65 70 75 80

Trp Ala Pro Lys Phe Ala Lys Asp Gly Val Val Val Ile Asp Asn Ser
85 90 95

Ser Ala Trp Arg Met Asp Pro Asp Val Pro Leu Val Val Pro Glu Val
100 105 110

Asn Pro Glu Asp Val Lys Asp Phe Lys Lys Lys Gly Ile Ile Ala Asn
115 120 125

Pro Asn Cys Ser Thr Ile Gln Met Val Val Ala Leu Lys Pro Ile Tyr
130 135 140

Asp Lys Ala Gly Ile Lys Arg Val Val Val Ser Thr Tyr Gln Ala Val
145 150 155 160

Ser Gly Ala Gly Ala Lys Ala Ile Glu Asp Leu Lys Asn Gln Thr Lys
165 170 175

Ala Trp Cys Glu Gly Lys Glu Met Pro Lys Ala Gln Lys Phe Pro His
180 185 190

Gln Ile Ala Phe Asn Ala Leu Pro His Ile Asp Val Phe Phe Glu Asp
195 200 205

Gly Tyr Thr Lys Glu Glu Asn Lys Met Leu Tyr Glu Thr Arg Lys Ile
210 215 220

Met His Asp Glu Asn Ile Lys Val Ser Ala Thr Cys Val Arg Ile Pro
225 230 235 240

Val Phe Tyr Gly His Ser Glu Ser Ile Ser Met Glu Thr Glu Lys Glu
245 250 255

Ile Ser Pro Glu Glu Ala Arg Glu Val Leu Lys Asn Ala Pro Gly Val
260 265 270

Ile Val Ile Asp Asn Pro Gln Asn Asn Glu Tyr Pro Met Pro Ile Met
275 280 285

Ala Glu Gly Arg Asp Glu Val Phe Val Gly Arg Ile Arg Lys Asp Arg
290 295 300

Val Phe Glu Pro Gly Leu Ser Met Trp Val Val Ala Asp Asn Ile Arg
305 310 315 320

Lys Gly Ala Ala Thr Asn Ala Val Gln Ile Ala Glu Leu Leu Val Lys
 325 330 335

Glu Gly Leu Ile
 340

<210> 53
 <211> 1727
 <212> DNA
 <213> Glycine max

<400> 53
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 aaacgcgtta tcccaaaagc ttttttttct gccctcaaa ttcaaagcca ccacaaaacc 180
 acgtgctctc agagcggttc tctcgagaa cgctgtcaaa acctcgggtg aggacacaaa 240
 gaacgctcat tttcagcact gttcaccaa atccgaagat gggatatctgt actgtgaggg 300
 cctcaagggtg catgacatca tggaaatctgt tgagagaaga ctttctatt tgtacagcaa 360
 gccccagata actaggaatg ttgaagccta caaggatgca ttggaagggt tgaactccat 420
 aattgggttat gccattaagg ccaataataa cttgaagatt ttggaacatt tgaggcactt 480
 ggggtgtggt gctgtgcttg ttagtgggaa tgagctgaag ttggctcttc gagctggctt 540
 tgatcccaca aggtgtatct ttaatgggaa tgggaaaatc ttggaggatt tggctctggc 600
 tgctcaggaa ggtgtgtttg tcaacattga tagtgagttt gacttggaaa acattgtaga 660
 ggctgcaaaa agggctggga agaaggtaaa tgttttactt cggattaatc ctgatgtgga 720
 tccacagggt catccttatg ttgccactgg gaataagaac tctaaatttg gcattagaaa 780
 tgagaagctg cagtgtcttt tagatgcagt gaaggaacat cctaagagc tcaaacttgt 840
 agggggccac tgccatcttg gttcaacaat tacgaagggt gacattttca gggatgcagc 900
 caccattatg atcaactaca ttgaccaa atcgagatcag ggttttgaag ttgattactt 960
 aaatattggt ggaggacttg ggatagatta ttatcattct ggtgccatcc ttcctacacc 1020
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 tgaaccagga agatcactca ttgcaaacac gtgttgctta gtaaccggg tgacaggtgt 1140
 taaaactaat ggatctaaaa acttcattgt aattgatgga agtatggctg aacttatccg 1200
 cctagtctt tatgatgctt accagcatat agagctgggt tccctgccc cgtcaaatgc 1260
 tgaacagaa acttttgatg tggttggccc tgtctgtgag tctgcagatt tcttaggaaa 1320
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 ttattgcatg agcatggcat caacctacaa tctaaagatg cggcctcctg agtattgggt 1440
 tgaagatgat ggatcagtga gcaaaataag acatggagag acttttgaag accacattcg 1500
 gttttttgag gggctttgag ctaataattt atctgttag aaagaaggct ggagaattgt 1560
 tatgtacttg gagtttgaat ctttcctcgt caatgaatgc atgactcttg tagttctgtt 1620
 tcttcctggt taattgaatg ttgactccca tgacaggaac agagaataaa gttgatttca 1680
 gttaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1727

<210> 54
 <211> 505
 <212> PRT
 <213> Glycine max

<400> 54
 Cys Asn Thr His Cys Leu Val Gly Lys Ile Phe His Gln Gln His Thr
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 Ala Met Ala Gly Ser Asn Ile Leu Ser His Ser Pro Ser Leu Pro Lys
 20 25 30
 Thr Tyr Ser His Ser Leu Asn Gln Asn Ala Leu Ser Gln Lys Leu Phe
 35 40 45
 Phe Leu Pro Leu Lys Phe Lys Ala Thr Thr Lys Pro Arg Ala Leu Arg
 50 55 60

Ala Val Leu Ser Gln Asn Ala Val Lys Thr Ser Val Glu Asp Thr Lys
 65 70 75 80
 Asn Ala His Phe Gln His Cys Phe Thr Lys Ser Glu Asp Gly Tyr Leu
 85 90 95
 Tyr Cys Glu Gly Leu Lys Val His Asp Ile Met Glu Ser Val Glu Arg
 100 105 110
 Arg Pro Phe Tyr Leu Tyr Ser Lys Pro Gln Ile Thr Arg Asn Val Glu
 115 120 125
 Ala Tyr Lys Asp Ala Leu Glu Gly Leu Asn Ser Ile Ile Gly Tyr Ala
 130 135 140
 Ile Lys Ala Asn Asn Asn Leu Lys Ile Leu Glu His Leu Arg His Leu
 145 150 155 160
 Gly Cys Gly Ala Val Leu Val Ser Gly Asn Glu Leu Lys Leu Ala Leu
 165 170 175
 Arg Ala Gly Phe Asp Pro Thr Arg Cys Ile Phe Asn Gly Asn Gly Lys
 180 185 190
 Ile Leu Glu Asp Leu Val Leu Ala Ala Gln Glu Gly Val Phe Val Asn
 195 200 205
 Ile Asp Ser Glu Phe Asp Leu Glu Asn Ile Val Glu Ala Ala Lys Arg
 210 215 220
 Ala Gly Lys Lys Val Asn Val Leu Leu Arg Ile Asn Pro Asp Val Asp
 225 230 235 240
 Pro Gln Val His Pro Tyr Val Ala Thr Gly Asn Lys Asn Ser Lys Phe
 245 250 255
 Gly Ile Arg Asn Glu Lys Leu Gln Cys Phe Leu Asp Ala Val Lys Glu
 260 265 270
 His Pro Asn Glu Leu Lys Leu Val Gly Ala His Cys His Leu Gly Ser
 275 280 285
 Thr Ile Thr Lys Val Asp Ile Phe Arg Asp Ala Ala Thr Ile Met Ile
 290 295 300
 Asn Tyr Ile Asp Gln Ile Arg Asp Gln Gly Phe Glu Val Asp Tyr Leu
 305 310 315 320
 Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr Tyr His Ser Gly Ala Ile
 325 330 335
 Leu Pro Thr Pro Arg Asp Leu Ile Asp Thr Val Arg Asp Leu Val Ile
 340 345 350
 Ser Arg Gly Leu Asn Leu Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala
 355 360 365
 Asn Thr Cys Cys Leu Val Asn Arg Val Thr Gly Val Lys Thr Asn Gly
 370 375 380

Ser Lys Asn Phe Ile Val Ile Asp Gly Ser Met Ala Glu Leu Ile Arg
385 390 395 400

Pro Ser Leu Tyr Asp Ala Tyr Gln His Ile Glu Leu Val Ser Pro Ala
405 410 415

Pro Ser Asn Ala Glu Thr Glu Thr Phe Asp Val Val Gly Pro Val Cys
420 425 430

Glu Ser Ala Asp Phe Leu Gly Lys Gly Arg Glu Leu Pro Thr Pro Ala
435 440 445

Lys Gly Thr Gly Leu Val Val His Asp Ala Gly Ala Tyr Cys Met Ser
450 455 460

Met Ala Ser Thr Tyr Asn Leu Lys Met Arg Pro Pro Glu Tyr Trp Val
465 470 475 480

Glu Asp Asp Gly Ser Val Ser Lys Ile Arg His Gly Glu Thr Phe Glu
485 490 495

Asp His Ile Arg Phe Phe Glu Gly Leu
500 505

<210> 55

<211> 858

<212> DNA

<213> Triticum aestivum

<400> 55

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gcagtcttgc	ctacacctat	ggatcttate	aacactgtcc	gggaattggt	cctctcacgg	120
gatcttactc	tcattattga	acctggaaga	tccttgatcg	ccaatacttg	ctgcttcgtc	180
aataaggtca	ctggtgtaaa	atcgaatggc	acgaagaatt	tcattgtagt	tgatggcagc	240
atggccgagc	tcatcaggcc	tagtctatat	ggagcatatc	agcatataga	actagtttct	300
ccctctccag	gtgcagaagt	agcaaccttc	gatattgttg	ggccagtctg	cgaatctgca	360
gatttccttg	gcaaagacag	ggagcttcca	acacctgaca	agggagctgg	tttggttgtc	420
cacgacgcag	gagcctactg	catgagcatg	gcttcgacct	acaacctgaa	gatgaggcca	480
gccgagtatt	gggtagagga	cgatgggtcc	attgttaaga	tcaggcacgg	tgaaacattt	540
gacgactaca	tgaagttctt	tgatgggtctt	cctgcctagg	ccctttttatc	ttgttttggg	600
caagcgtagc	ccttttcatt	tgatgagcgc	atctcgtgga	agattcgtgt	gggaaaacta	660
ttcacttggt	tgttatgtgg	gtcatcccca	tcaagcatgg	gggtttttat	ttgttagaat	720
agagtccaac	aagtttagtg	attgtagaga	ttgaatggac	ttactgcatt	gttatcaatt	780
cttgtttata	ctatataaag	ggtccgactc	ctccaataa	agttaaagaa	tattgttggt	840
tactttttatc	taaaaaaaa					858

<210> 56

<211> 192

<212> PRT

<213> Triticum aestivum

<400> 56

Phe Glu Leu Glu Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr
1 5 10 15

His His Thr Gly Ala Val Leu Pro Thr Pro Met Asp Leu Ile Asn Thr
20 25 30

Val Arg Glu Leu Val Leu Ser Arg Asp Leu Thr Leu Ile Ile Glu Pro
35 40 45

Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn Lys Val Thr
50 55 60

Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile Val Val Asp Gly Ser
65 70 75 80

Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly Ala Tyr Gln His Ile
85 90 95

Glu Leu Val Ser Pro Ser Pro Gly Ala Glu Val Ala Thr Phe Asp Ile
100 105 110

Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg Glu
115 120 125

Leu Pro Thr Pro Asp Lys Gly Ala Gly Leu Val Val His Asp Ala Gly
130 135 140

Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Met Arg Pro
145 150 155 160

Ala Glu Tyr Trp Val Glu Asp Asp Gly Ser Ile Val Lys Ile Arg His
165 170 175

Gly Glu Thr Phe Asp Asp Tyr Met Lys Phe Phe Asp Gly Leu Pro Ala
180 185 190

<210> 57

<211> 526

<212> PRT

<213> Arabidopsis thaliana

<400> 57

Met Gly Gln Thr Asn Ser Glu Thr Gln Gln Ala Arg Leu Tyr Thr Gln
1 5 10 15

Asn Ser Gln Lys Gln Leu Leu Arg Ser Phe Leu Leu Leu His Leu Ile
20 25 30

Phe Gly Tyr Gln Ser His Lys Thr Leu Arg Met Ala Ala Ala Thr Gln
35 40 45

Phe Leu Ser Gln Pro Ser Ser Leu Asn Pro His Gln Leu Lys Asn Gln
50 55 60

Thr Ser Gln Arg Ser Arg Ser Ile Pro Val Leu Ser Leu Lys Ser Thr
65 70 75 80

Leu Lys Pro Leu Lys Arg Leu Ser Val Lys Ala Ala Val Val Ser Gln
85 90 95

Asn Ser Ser Lys Thr Val Thr Lys Phe Asp His Cys Phe Lys Lys Ser
100 105 110

Ser Asp Gly Phe Leu Tyr Cys Glu Gly Thr Lys Val Glu Asp Ile Met
115 120 125

Glu Ser Val Glu Arg Arg Pro Phe Tyr Leu Tyr Ser Lys Pro Gln Ile
 130 135 140
 Thr Arg Asn Leu Glu Ala Tyr Lys Glu Ala Leu Glu Gly Val Ser Ser
 145 150 155 160
 Val Ile Gly Tyr Ala Ile Lys Ala Asn Asn Leu Lys Ile Leu Glu
 165 170 175
 His Leu Arg Ser Leu Gly Cys Gly Ala Val Leu Val Ser Gly Asn Glu
 180 185 190
 Leu Arg Leu Ala Leu Arg Ala Gly Phe Asp Pro Thr Lys Cys Ile Phe
 195 200 205
 Asn Gly Asn Gly Lys Ser Leu Glu Asp Leu Val Leu Ala Ala Gln Glu
 210 215 220
 Gly Val Phe Val Asn Val Asp Ser Glu Phe Asp Leu Asn Asn Ile Val
 225 230 235 240
 Glu Ala Ser Arg Ile Ser Gly Lys Gln Val Asn Val Leu Leu Arg Ile
 245 250 255
 Asn Pro Asp Val Asp Pro Gln Val His Pro Tyr Val Ala Thr Gly Asn
 260 265 270
 Lys Asn Ser Lys Phe Gly Ile Arg Asn Glu Lys Leu Gln Trp Phe Leu
 275 280 285
 Asp Gln Val Lys Ala His Pro Lys Glu Leu Lys Leu Val Gly Ala His
 290 295 300
 Cys His Leu Gly Ser Thr Ile Thr Lys Val Asp Ile Phe Arg Asp Ala
 305 310 315 320
 Ala Val Leu Met Ile Glu Tyr Ile Asp Glu Ile Arg Arg Gln Gly Phe
 325 330 335
 Glu Val Ser Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr Tyr
 340 345 350
 His Ala Gly Ala Val Leu Pro Thr Pro Met Asp Leu Ile Asn Thr Val
 355 360 365
 Arg Glu Leu Val Leu Ser Arg Asp Leu Asn Leu Ile Ile Glu Pro Gly
 370 375 380
 Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn His Val Thr Gly
 385 390 395 400
 Val Lys Thr Asn Gly Thr Lys Asn Phe Ile Val Ile Asp Gly Ser Met
 405 410 415
 Ala Glu Leu Ile Arg Pro Ser Leu Tyr Asp Ala Tyr Gln His Ile Glu
 420 425 430
 Leu Val Ser Pro Pro Pro Ala Glu Ala Glu Val Thr Lys Phe Asp Val
 435 440 445

Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg Glu
450 455 460

Leu Pro Thr Pro Pro Gln Gly Ala Gly Leu Val Val His Asp Ala Gly
465 470 475 480

Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Met Arg Pro
485 490 495

Pro Glu Tyr Trp Val Glu Glu Asp Gly Ser Ile Thr Lys Ile Arg His
500 505 510

Ala Glu Thr Phe Asp Asp His Leu Arg Phe Phe Glu Gly Leu
515 520 525

<210> 58
<211> 1143
<212> DNA
<213> Oryza sativa

<400> 58
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cgccgccgct gccaaaggccg ttgacgcctt ctccggtctc ctccctacacc aagatgacct 180
cgtcctcgcg ggctcagagt ccgagaaagc cgtcagtggc ttccacgccg acaacatcgc 240
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gccaccagc aagatgcgtg ccgcgctgcc caaacagggt gccgtccacc agcacgtccg 420
caactccagc caagcgccg cgcttgctgc cgtgtgtgtg caaggggacg ccaccctcat 480
cggctccgca atgtcctccg acggcatcgt ggagccaacc agggcgccgc tgattcctgg 540
catggctgcy gtcaaggccg cggcggttga agctggggca ttgggctgca ccatcagtgg 600
agcaggggcca actgctgtgg ctgtcattga cggggaggag aaggggcgagg aggttgccg 660
gaggatggtg gaggcattcg ccaatgccgg caatctcaaa gcaacagcta ctggtgctca 720
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaata 1140
aaa 1143

<210> 59
<211> 255
<212> PRT
<213> Oryza sativa

<400> 59
His Glu Val Ala Ala Ile Ala Ala Leu Arg Ala Leu Asp Val Lys Ser
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His Ala Val Ser Ile His Leu Thr Lys Gly Leu Pro Leu Gly Ser Gly
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Leu Gly Ser Ser Ala Ala Ser Ala Ala Ala Ala Lys Ala Val Asp
35 40 45
Ala Leu Phe Gly Ser Leu Leu His Gln Asp Asp Leu Val Leu Ala Gly
50 55 60

Leu Glu Ser Glu Lys Ala Val Ser Gly Phe His Ala Asp Asn Ile Ala
 65 70 75 80
 Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe
 85 90 95
 His Leu Ile Pro Leu Ser Ser Pro Pro Ala Leu Arg Leu His Phe Val
 100 105 110
 Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys Met Arg Ala Ala
 115 120 125
 Leu Pro Lys Gln Val Ala Val His Gln His Val Arg Asn Ser Ser Gln
 130 135 140
 Ala Ala Ala Leu Val Ala Ala Val Leu Gln Gly Asp Ala Thr Leu Ile
 145 150 155 160
 Gly Ser Ala Met Ser Ser Asp Gly Ile Val Glu Pro Thr Arg Ala Pro
 165 170 175
 Leu Ile Pro Gly Met Ala Ala Val Lys Ala Ala Ala Leu Glu Ala Gly
 180 185 190
 Ala Leu Gly Cys Thr Ile Ser Gly Ala Gly Pro Thr Ala Val Ala Val
 195 200 205
 Ile Asp Gly Glu Glu Lys Gly Glu Glu Val Gly Arg Arg Met Val Glu
 210 215 220
 Ala Phe Ala Asn Ala Gly Asn Leu Lys Ala Thr Ala Thr Val Ala Gln
 225 230 235 240
 Leu Asp Arg Val Gly Ala Arg Val Ile Ser Thr Ser Thr Leu Glu
 245 250 255

<210> 60
 <211> 370
 <212> PRT
 <213> Arabidopsis thaliana

<400> 60
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 35 40 45
 Pro Val Phe Val Ser Val Lys Thr Phe Ala Pro Ala Thr Val Ala Asn
 50 55 60
 Leu Gly Pro Gly Phe Asp Phe Leu Gly Cys Ala Val Asp Gly Leu Gly
 65 70 75 80
 Asp His Val Thr Leu Arg Val Asp Pro Ser Val Arg Ala Gly Glu Val
 85 90 95

Ser Ile Ser Glu Ile Thr Gly Thr Thr Thr Lys Leu Ser Thr Asn Pro
 100 105 110
 Leu Arg Asn Cys Ala Gly Ile Ala Ala Ile Ala Thr Met Lys Met Leu
 115 120 125
 Gly Ile Arg Ser Val Gly Leu Ser Leu Asp Leu His Lys Gly Leu Pro
 130 135 140
 Leu Gly Ser Gly Leu Gly Ser Ser Ala Ala Ser Ala Ala Ala Ala
 145 150 155 160
 Val Ala Val Asn Glu Ile Phe Gly Arg Lys Leu Gly Ser Asp Gln Leu
 165 170 175
 Val Leu Ala Gly Leu Glu Ser Glu Ala Lys Val Ser Gly Tyr His Ala
 180 185 190
 Asp Asn Ile Ala Pro Ala Ile Met Gly Gly Phe Val Leu Ile Arg Asn
 195 200 205
 Tyr Glu Pro Leu Asp Leu Lys Pro Leu Lys Phe Pro Ser Asp Lys Asp
 210 215 220
 Leu Phe Phe Val Leu Val Ser Pro Glu Phe Glu Ala Pro Thr Lys Lys
 225 230 235 240
 Met Arg Ala Ala Leu Pro Thr Glu Ile Pro Met Val His His Val Trp
 245 250 255
 Asn Ser Ser Gln Ala Ala Ala Leu Val Ala Ala Val Leu Glu Gly Asp
 260 265 270
 Ala Val Met Leu Gly Lys Ala Leu Ser Ser Asp Lys Ile Val Glu Pro
 275 280 285
 Thr Arg Ala Pro Leu Ile Pro Gly Met Glu Ala Val Lys Lys Ala Ala
 290 295 300
 Leu Glu Ala Gly Ala Phe Gly Cys Thr Ile Ser Gly Ala Gly Pro Thr
 305 310 315 320
 Ala Val Ala Val Ile Asp Ser Glu Glu Lys Gly Gln Val Ile Gly Glu
 325 330 335
 Lys Met Val Glu Ala Phe Trp Lys Val Gly His Leu Lys Ser Val Ala
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 Ser Val Lys Lys Leu Asp Lys Val Gly Ala Arg Leu Val Asn Ser Val
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 Ser Arg
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<210> 61
 <211> 1508
 <212> DNA
 <213> Zea mays

<400> 61

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tagcgtcaag	gacaggatag	ggtacagtat	gataaatgat	gctgaacaga	agggcttgat	420
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catgcttcaa	cagttcgata	accctgccaa	ccctcaggta	cattatgaga	ctactggtcc	720
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<210> 62

<211> 398

<212> PRT

<213> Zea mays

<400> 62

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Pro	Ser	Leu	Val	Arg	Gly	Thr	Pro	Ala	Pro	Thr	Leu	Val	Leu	Arg	Leu
		35					40					45			
His	Pro	Asp	Gly	Arg	Gly	His	Gly	Leu	Leu	Ala	His	Thr	Gly	Pro	Ser
	50					55					60				
Pro	Ser	Ser	Arg	Cys	Arg	Ala	Val	Ala	Ala	Glu	Val	Gly	Gly	Leu	Asn
	65			70					75					80	
Ile	Ala	Asn	Asp	Val	Thr	Gln	Leu	Ile	Gly	Asn	Thr	Pro	Met	Val	Tyr
			85					90						95	
Leu	Asn	Asn	Val	Val	Lys	Gly	Ser	Val	Ala	Asn	Val	Ala	Ala	Lys	Leu
		100					105					110			
Glu	Ile	Met	Glu	Pro	Cys	Cys	Ser	Val	Lys	Asp	Arg	Ile	Gly	Tyr	Ser
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Met	Ile	Asn	Asp	Ala	Glu	Gln	Lys	Gly	Leu	Ile	Thr	Pro	Gly	Lys	Ser
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Val Leu Val Glu Ala Thr Ser Gly Asn Thr Gly Ile Gly Leu Ala Phe
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 Ile Ala Ala Ser Lys Gly Tyr Lys Leu Ile Leu Thr Met Pro Ser Ser
 165 170 175
 Met Ser Met Glu Arg Arg Val Leu Leu Arg Ala Phe Gly Ala Glu Leu
 180 185 190
 Val Leu Thr Asp Ala Ala Lys Gly Met Lys Gly Ala Leu Asp Lys Ala
 195 200 205
 Thr Glu Ile Leu Asn Lys Thr Pro Asn Ser Tyr Met Leu Gln Gln Phe
 210 215 220
 Asp Asn Pro Ala Asn Pro Gln Val His Tyr Glu Thr Thr Gly Pro Glu
 225 230 235 240
 Ile Trp Glu Asp Ser Lys Gly Lys Val Asp Ile Phe Ile Gly Gly Ile
 245 250 255
 Gly Thr Gly Gly Thr Ile Ser Gly Ala Gly Arg Phe Leu Lys Glu Lys
 260 265 270
 Asn Pro Gly Ile Lys Val Ile Gly Ile Glu Pro Ser Glu Ser Asn Ile
 275 280 285
 Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Ile Gly Ala
 290 295 300
 Gly Phe Val Pro Arg Asn Leu Asp Ser Asp Ile Leu Asp Glu Val Ile
 305 310 315 320
 Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Lys Gln Leu Ala Val
 325 330 335
 Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala Ala Ala
 340 345 350
 Ala Ile Lys Val Ala Lys Arg Pro Glu Asn Ala Gly Lys Leu Ile Val
 355 360 365
 Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Val Leu Tyr
 370 375 380
 Gln Ser Ile Arg Glu Glu Cys Glu Asn Met Gln Pro Glu Pro
 385 390 395

<210> 63
 <211> 1522
 <212> DNA
 <213> Oryza sativa

<400> 63
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 tctgtcttct tctccgcccg atcgccacga cagaccctcc tcttaccacc tctcgcccgc 180
 aaccctacac tgaccatcca gccccggccc catcccttcc ggaacatcaa ctctcctcc 240
 tcttcagct ggatgtgcca cgccgtcgcc gccgagtcg agggcctcaa catcgccgac 300

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tccagaggat ataaattaat attgaccatg cctgcatcaa tgagcatgga gagaagagtt 600
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tttgacaacc ctgccaaccc aaaggtacat tatgagacta ctggggccaga aatctgggag 780
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tgaggcttgt gaggttactg tgaaatttct ctgaacatct tctactcttc tcttttatcc 1440
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attgtaaaaa aaaaaaaaaa aa 1522

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<210> 64
 <211> 415
 <212> PRT
 <213> Oryza sativa

<400> 64

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          20              25              30

Ala Leu Gln Val His Phe Gly Ser Ser Cys Phe Phe Ser Ala Arg Ser
  35              40              45

Pro Arg Gln Thr Leu Leu Leu Pro Pro Leu Ala Arg Asn Pro Thr Leu
  50              55              60

Thr Ile Gln Pro Arg Pro His Pro Phe Arg Asn Ile Asn Ser Ser Ser
  65              70              75              80

Ser Ser Ser Trp Met Cys His Ala Val Ala Ala Glu Val Glu Gly Leu
          85              90              95

Asn Ile Ala Asp Asp Val Thr Gln Leu Ile Gly Lys Thr Pro Met Val
  100              105              110

Tyr Leu Asn Asn Ile Val Lys Gly Cys Val Ala Asn Val Ala Ala Lys
  115              120              125

Leu Glu Ile Met Glu Pro Cys Cys Ser Val Lys Asp Arg Ile Gly Tyr
  130              135              140

Ser Met Ile Ser Asp Ala Glu Glu Lys Gly Leu Ile Thr Pro Gly Lys
  145              150              155              160

Ser Val Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile Gly Leu Ala
          165              170              175

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Phe Ile Ala Ala Ser Arg Gly Tyr Lys Leu Ile Leu Thr Met Pro Ala
 180 185 190
 Ser Met Ser Met Glu Arg Arg Val Leu Leu Lys Ala Phe Gly Ala Glu
 195 200 205
 Leu Val Leu Thr Asp Ala Ala Lys Gly Met Lys Gly Ala Val Asp Lys
 210 215 220
 Ala Thr Glu Ile Leu Asn Lys Thr Pro Asp Ala Tyr Met Leu Gln Gln
 225 230 235 240
 Phe Asp Asn Pro Ala Asn Pro Lys Val His Tyr Glu Thr Thr Gly Pro
 245 250 255
 Glu Ile Trp Glu Asp Ser Lys Gly Lys Val Asp Val Phe Ile Gly Gly
 260 265 270
 Ile Gly Thr Gly Gly Thr Ile Ser Gly Ala Gly Arg Phe Leu Lys Glu
 275 280 285
 Lys Asn Pro Gly Ile Lys Val Ile Gly Ile Glu Pro Ser Glu Ser Asn
 290 295 300
 Ile Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Ile Gly
 305 310 315 320
 Ala Gly Phe Val Pro Arg Asn Leu Asp Ser Glu Val Leu Asp Glu Val
 325 330 335
 Ile Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Lys Gln Leu Ala
 340 345 350
 Leu Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala Ala
 355 360 365
 Ala Ala Ile Lys Val Ala Lys Arg Pro Glu Asn Ala Gly Lys Leu Val
 370 375 380
 Val Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Ile Leu
 385 390 395 400
 Phe Gln Ser Ile Arg Glu Glu Cys Glu Lys Leu Gln Pro Glu Pro
 405 410 415

<210> 65

<211> 383

<212> PRT

<213> Spinacia oleracea

<400> 65

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Leu Glu Leu Arg Glu Val Lys Asn Leu Ala Asn Phe Arg Val Gly Pro
 20 25 30

Pro Ser Ser Leu Ser Cys Asn Asn Phe Lys Lys Val Ser Ser Ser Pro
 35 40 45

Ile Thr Cys Lys Ala Val Ser Leu Ser Pro Pro Ser Thr Ile Glu Gly
 50 55 60
 Leu Asn Ile Ala Glu Asp Val Ser Gln Leu Ile Gly Lys Thr Pro Met
 65 70 75 80
 Val Tyr Leu Asn Asn Val Ser Lys Gly Ser Val Ala Asn Ile Ala Ala
 85 90 95
 Lys Leu Glu Ser Met Glu Pro Cys Cys Ser Val Lys Asp Arg Ile Gly
 100 105 110
 Tyr Ser Met Ile Asp Asp Ala Glu Gln Lys Gly Val Ile Thr Pro Gly
 115 120 125
 Lys Thr Thr Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile Gly Leu
 130 135 140
 Ala Phe Ile Ala Ala Ala Arg Gly Tyr Lys Ile Thr Leu Thr Met Pro
 145 150 155 160
 Ala Ser Met Ser Met Glu Arg Arg Val Ile Leu Lys Ala Phe Gly Ala
 165 170 175
 Glu Leu Val Leu Thr Asp Pro Ala Lys Gly Met Lys Gly Ala Val Glu
 180 185 190
 Lys Ala Glu Glu Ile Leu Lys Lys Thr Pro Asp Ser Tyr Met Leu Gln
 195 200 205
 Gln Phe Asp Asn Pro Ala Asn Pro Lys Ile His Tyr Glu Thr Thr Gly
 210 215 220
 Pro Glu Ile Trp Glu Asp Thr Lys Gly Lys Val Asp Ile Phe Val Ala
 225 230 235 240
 Gly Ile Gly Thr Gly Gly Thr Ile Ser Gly Val Gly Arg Tyr Leu Lys
 245 250 255
 Glu Arg Asn Pro Gly Val Gln Val Ile Gly Ile Glu Pro Thr Glu Ser
 260 265 270
 Asn Ile Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Leu
 275 280 285
 Gly Ala Gly Phe Val Pro Ser Asn Leu Asp Leu Gly Val Met Asp Glu
 290 295 300
 Val Ile Glu Val Ser Ser Glu Glu Ala Val Glu Met Ala Lys Gln Leu
 305 310 315 320
 Ala Met Lys Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala
 325 330 335
 Ala Ala Ala Val Arg Ile Gly Lys Arg Pro Glu Asn Ala Gly Lys Leu
 340 345 350
 Ile Ala Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Ile
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Leu Phe Gln Ser Ile Arg Glu Glu Cys Glu Asn Met Lys Pro Glu
 370 375 380

<210> 66

<211> 386

<212> PRT

<213> Solanum tuberosum

<400> 66

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 20 25 30

Leu Gly Phe Ser Lys Leu Asn Gly Ser Arg Lys Val Ala Phe Pro Ser
 35 40 45

Val Val Cys Lys Ala Val Ser Val Pro Thr Lys Ser Ser Thr Glu Ile
 50 55 60

Glu Gly Leu Asn Ile Ala Glu Asp Val Thr Gln Leu Ile Gly Asn Thr
 65 70 75 80

Pro Met Val Tyr Leu Asn Thr Ile Ala Lys Gly Cys Val Ala Asn Ile
 85 90 95

Ala Ala Lys Leu Glu Ile Met Glu Pro Cys Cys Ser Val Lys Asp Arg
 100 105 110

Ile Gly Phe Ser Met Ile Val Asp Ala Glu Glu Lys Gly Leu Ile Ser
 115 120 125

Pro Gly Lys Thr Val Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile
 130 135 140

Gly Leu Ala Phe Ile Ala Ala Ser Arg Gly Tyr Lys Leu Ile Leu Thr
 145 150 155 160

Met Pro Ala Ser Met Ser Leu Glu Arg Arg Val Ile Leu Lys Ala Phe
 165 170 175

Gly Ala Glu Leu Val Leu Thr Asp Pro Ala Lys Gly Met Lys Gly Ala
 180 185 190

Val Ser Lys Ala Glu Glu Ile Leu Asn Asn Thr Pro Asp Ala Tyr Ile
 195 200 205

Leu Gln Gln Phe Asp Asn Pro Ala Asn Pro Lys Ile His Tyr Glu Thr
 210 215 220

Thr Gly Pro Glu Ile Trp Glu Asp Thr Lys Gly Lys Ile Asp Ile Leu
 225 230 235 240

Val Ala Gly Ile Gly Thr Gly Gly Thr Ile Thr Gly Thr Gly Arg Phe
 245 250 255

Leu Lys Glu Gln Asn Pro Asn Ile Lys Ile Ile Gly Val Glu Pro Thr
 260 265 270

Glu Ser Asn Val Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln
275 280 285

Gly Ile Gly Ala Gly Phe Ile Pro Gly Asn Leu Asp Gln Asp Val Met
290 295 300

Asp Glu Val Ile Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Arg
305 310 315 320

Thr Leu Ala Leu Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala
325 330 335

Ala Ala Leu Ala Ala Ile Gln Val Gly Lys Arg Pro Glu Asn Ala Gly
340 345 350

Lys Leu Ile Gly Val Val Phe Pro Ser Tyr Gly Glu Arg Tyr Leu Ser
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Ser Ile Leu Phe Gln Ser Ile Arg Glu Glu Cys Glu Lys Met Lys Pro
370 375 380

Glu Leu
385

<210> 67
<211> 1581
<212> DNA
<213> Zea mays

<400> 67
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ataaaaaaaa aaaaaaaaaa a 1581

<210> 68
 <211> 470
 <212> PRT
 <213> Zea mays

<400> 68
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 Gln Ser Phe Arg Val Pro Pro Leu Arg Leu Ser Leu Phe Arg Arg Met
 35 40 45
 Ala Gly Arg Ser Leu Thr Val Ile Ala Gly Ala Ser Gly Gly Ser Glu
 50 55 60
 Arg Asp Leu Ser Ala Ser Ala Val Ser Val Glu Ala Leu Asp Ser Val
 65 70 75 80
 Ala Ser Asp Ser Asp Leu Glu Thr Lys Glu Pro Ser Val Ser Thr Met
 85 90 95
 Leu Thr Ser Phe Glu Asn Ser Phe Asp Lys Tyr Gly Ala Leu Ser Thr
 100 105 110
 Pro Leu Tyr Gln Thr Ala Thr Phe Lys Gln Pro Ser Ala Thr Asp Tyr
 115 120 125
 Gly Thr Tyr Asp Tyr Thr Arg Ser Gly Asn Pro Thr Arg Asp Val Leu
 130 135 140
 Gln Ser Leu Met Ala Lys Leu Glu Lys Ala Asp Gln Ala Phe Cys Phe
 145 150 155 160
 Thr Ser Gly Met Ala Ala Leu Ala Ala Val Lys His Leu Leu Gln Ala
 165 170 175
 Gly Gln Glu Ile Val Ala Gly Glu Asp Ile Tyr Gly Gly Ser Asp Arg
 180 185 190
 Leu Leu Ser Gln Val Val Pro Arg Asn Gly Ile Val Val Lys Arg Val
 195 200 205
 Asp Thr Thr Lys Ile Ser Asp Val Val Ser Ala Ile Gly Pro Ser Thr
 210 215 220
 Arg Leu Val Trp Leu Glu Ser Pro Thr Asn Pro Arg Gln Gln Ile Thr
 225 230 235 240
 Asp Ile Lys Thr Ile Ser Glu Ile Ala His Ser His Gly Ala Leu Val
 245 250 255
 Leu Val Asp Asn Ser Ile Met Ser Pro Val Leu Ser Arg Pro Ile Glu
 260 265 270
 Leu Gly Ala Asp Ile Val Met His Ser Ala Thr Lys Phe Ile Ala Gly
 275 280 285

His Ser Asp Leu Met Ala Gly Ile Leu Ala Val Lys Gly Glu Ser Leu
 290 295 300
 Ala Lys Glu Val Gly Phe Leu Gln Asn Ala Glu Gly Ser Gly Leu Ala
 305 310 315 320
 Pro Phe Asp Cys Trp Leu Cys Leu Arg Gly Ile Lys Thr Met Ala Leu
 325 330 335
 Arg Val Glu Lys Gln Gln Ala Asn Ala Gln Lys Ile Ala Glu Phe Leu
 340 345 350
 Ala Ser His Pro Arg Val Lys Gln Val Asn Tyr Ala Gly Leu Pro Asp
 355 360 365
 His Pro Gly Arg Ala Leu His Tyr Ser Gln Ala Lys Gly Ala Gly Ser
 370 375 380
 Val Leu Ser Phe Leu Thr Gly Ser Leu Ala Leu Ser Lys His Val Val
 385 390 395 400
 Glu Thr Thr Lys Tyr Phe Ser Val Thr Val Ser Phe Gly Ser Val Lys
 405 410 415
 Ser Leu Ile Ser Leu Pro Cys Phe Met Ser His Ala Ser Ile Pro Ala
 420 425 430
 Ser Val Arg Glu Glu Arg Gly Leu Thr Asp Asp Leu Val Arg Ile Ser
 435 440 445
 Val Gly Ile Glu Asp Val Glu Asp Leu Ile Ala Asp Leu Asp Arg Ala
 450 455 460
 Leu Arg Thr Gly Pro Val
 465 470

<210> 69
 <211> 1685
 <212> DNA
 <213> *Oryza sativa*

<400> 69
 agccaaccat gagcgccgcc gccgcccgcg ccgcccgcgc cgcaatcccc acctctctcg 60
 gccgcctctt ccacctccgc cccaccccga aacctcccg gaaccttagc ggcagctcag 120
 cgcaacccct cctccgctc agctaccacc cagccctcac gctctctcgc cgcatggagg 180
 cgccggcggc gatcgccgac tcccacggcg gcggcgacct gagcgcgtcc gcggtcggcg 240
 cggaggcgct gggcgccgct gccgctccgg atttcgatgt ggagatgaag ggccttagcg 300
 tggcgacgat actgacgagc ttcgagaact cgttcgatgg gttcgggtct atgagcacgc 360
 cgctgtacca gacggccacg ttaagcagc cttcagcaac cgataatgga ccttatgatt 420
 acactagaag tggtaaccct acacgtgatg ttctccaaag ccttatggct aagcttgaga 480
 aggcggatca ggcattctgc ttcaccagtg gcatggcagc actagctgca gtaacacacc 540
 tccttaagtc tggacaagaa atagttgctg gagaggacat atatggtggc tcagaccgctc 600
 tgctctcaca agttgccccg agacatggga ttgtagtaaa acgaattgat acaacaaaaa 660
 ttagtgaggt aacttctgca attgggccct tgactaaact agtatggctt gaaagtccca 720
 ccaatccccg totacaaatt actgatataa agaaaatagc agagatagct cattaaccatg 780
 gtgctcttgt ttagtagac aacagcatca tgtctctgt gctctcccg cctctagaac 840
 ttggagcaga tattgttatg cactcagcaa ccaaatttat agctggacat agcgatctta 900
 tggctggaat tcttgcggtg aagggtgaaa gcagcttggc taaagagatt gcatttctac 960
 aaaatgctga aggatcaggt ttggcaccat ttgattgctg gctttgtttg agaggaatca 1020
 aaaccatggc tttgcggtg gagaaagcagc aggctaattg tcagaagatt gctgaatttc 1080

tagcttctca tccaagagta aagaaagtga actatgcagg acttcctgat catcctggac 1140
 gatctctaca ctattcccag gcaaagggag cgggttcagt tctcagtttc ctaactgggt 1200
 cattagctct ctcaaaacat gttgttgaga ccacaaagta cttcaatgta acagttagct 1260
 ttggaagtgt gaaatcgctc attagcctgc catgcttcat gtcacacgcc agcatccctt 1320
 ctgcggttcg cgaggagcgc ggcctgacag acgatctagt caggatatcg gttggaattg 1380
 aggatgccga cgacctcata gcggatcttg atcatgctct ccggtctggt ccagcttaga 1440
 gcctgtgaat tctgtgccct tcctgttcgt tagggatgta gatgtgggtca tgtgggtgct 1500
 atctgtgtgg gtgattgatt cattgggtcaa ctcaataagc tgctgtgtca tcgagggaaat 1560
 aaagacaatc tatcccaaat tttttaacac catatggtga ccaactgacc atgatatggt 1620
 cttaatcaat tgatatttat agaaggtttc tttgaactgc aaaaaaaaaa aaaaaaaaaa 1680
 aaaaa 1685

<210> 70
 <211> 476
 <212> PRT
 <213> Oryza sativa

<400> 70
 Met Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ile Pro Thr Ser
 1 5 10 15
 Leu Gly Arg Leu Phe His Leu Arg Pro Thr Pro Asn Pro Ser Arg Asn
 20 25 30
 Leu Ser Gly Ser Ser Ala Gln Pro Leu Leu Arg Leu Ser Tyr His Pro
 35 40 45
 Arg Leu Thr Leu Ser Arg Arg Met Glu Ala Pro Ala Ala Ile Ala Asp
 50 55 60
 Ser His Gly Gly Gly Asp Leu Ser Ala Ser Ala Val Gly Ala Glu Ala
 65 70 75 80
 Leu Gly Ala Val Ala Ala Pro Asp Phe Asp Val Glu Met Lys Glu Pro
 85 90 95
 Ser Val Ala Thr Ile Leu Thr Ser Phe Glu Asn Ser Phe Asp Gly Phe
 100 105 110
 Gly Ser Met Ser Thr Pro Leu Tyr Gln Thr Ala Thr Phe Lys Gln Pro
 115 120 125
 Ser Ala Thr Asp Asn Gly Pro Tyr Asp Tyr Thr Arg Ser Gly Asn Pro
 130 135 140
 Thr Arg Asp Val Leu Gln Ser Leu Met Ala Lys Leu Glu Lys Ala Asp
 145 150 155 160
 Gln Ala Phe Cys Phe Thr Ser Gly Met Ala Ala Leu Ala Ala Val Thr
 165 170 175
 His Leu Leu Lys Ser Gly Gln Glu Ile Val Ala Gly Glu Asp Ile Tyr
 180 185 190
 Gly Gly Ser Asp Arg Leu Leu Ser Gln Val Ala Pro Arg His Gly Ile
 195 200 205
 Val Val Lys Arg Ile Asp Thr Thr Lys Ile Ser Glu Val Thr Ser Ala
 210 215 220

Ile Gly Pro Leu Thr Lys Leu Val Trp Leu Glu Ser Pro Thr Asn Pro
 225 230 235 240
 Arg Leu Gln Ile Thr Asp Ile Lys Lys Ile Ala Glu Ile Ala His Tyr
 245 250 255
 His Gly Ala Leu Val Leu Val Asp Asn Ser Ile Met Ser Pro Val Leu
 260 265 270
 Ser Arg Pro Leu Glu Leu Gly Ala Asp Ile Val Met His Ser Ala Thr
 275 280 285
 Lys Phe Ile Ala Gly His Ser Asp Leu Met Ala Gly Ile Leu Ala Val
 290 295 300
 Lys Gly Glu Ser Ser Leu Ala Lys Glu Ile Ala Phe Leu Gln Asn Ala
 305 310 315 320
 Glu Gly Ser Gly Leu Ala Pro Phe Asp Cys Trp Leu Cys Leu Arg Gly
 325 330 335
 Ile Lys Thr Met Ala Leu Arg Val Glu Lys Gln Gln Ala Asn Ala Gln
 340 345 350
 Lys Ile Ala Glu Phe Leu Ala Ser His Pro Arg Val Lys Lys Val Asn
 355 360 365
 Tyr Ala Gly Leu Pro Asp His Pro Gly Arg Ser Leu His Tyr Ser Gln
 370 375 380
 Ala Lys Gly Ala Gly Ser Val Leu Ser Phe Leu Thr Gly Ser Leu Ala
 385 390 395 400
 Leu Ser Lys His Val Val Glu Thr Thr Lys Tyr Phe Asn Val Thr Val
 405 410 415
 Ser Phe Gly Ser Val Lys Ser Leu Ile Ser Leu Pro Cys Phe Met Ser
 420 425 430
 His Ala Ser Ile Pro Ser Ala Val Arg Glu Glu Arg Gly Leu Thr Asp
 435 440 445
 Asp Leu Val Arg Ile Ser Val Gly Ile Glu Asp Ala Asp Asp Leu Ile
 450 455 460
 Ala Asp Leu Asp His Ala Leu Arg Ser Gly Pro Ala
 465 470 475

<210> 71
 <211> 1699
 <212> DNA
 <213> Triticum aestivum

<400> 71
 gcacgagagc gtggccacga tactgaccag cttcgagAAC tcgttcgaca agtatggggc 60
 tctcagcagc ccgctgtacc agacggccac cttcaagcag ccttcagcaa ccgttaatgg 120
 agcttatgat tatactagaa gtggcaaccc tactcgtgat gttctccaga gccttatggc 180
 taagctcgag aaggcagacc aagcattctg cttcactagt gggatggcat cactggctgc 240
 agtaacacac ctccttcagg ctggacaaga aatagttgct ggagaggaca tatatggtgg 300
 ctctgatcgt ctgctctcac aagttgtccc aagaaatgga attgtagtaa aacgggtcga 360

tacaactaaa	attaacgacg	tgactgctgc	aatcggaccc	ttgactagac	tagtttggct	420
tgaaagtccc	accaatcctc	gtcaacaaat	tactgatata	aagaaaatct	cagagatagc	480
tcattctcat	ggtgcacttg	ttttggtgga	caacagtatc	atgtctccag	tgctatcctg	540
gcctatagaa	cttgagcag	atattgtgat	gcactcagct	accaaattta	tagctggaca	600
cagtgatctt	atggctgga	ttcttgctgt	aaagggtgaa	agcttggcta	aggagattgc	660
atttctacaa	aacgctgaag	gttctggttt	ggcacctttt	gattgttggc	tttgcttgag	720
agggatcaaa	accatggcct	tacgggtgga	aaagcaacag	gataatgcc	agaagattgc	780
tgaattctta	gcttctcatc	caaggggtcaa	gcaagtgaat	tatgctggac	ttcctgatca	840
tcctggccga	tctttacact	actctcaggc	aaagggagcg	ggctctgtcc	tcagtttcca	900
aactggttca	ttgtctctct	caaagcatgt	tgttgagaca	accaagtact	tcaacgtaac	960
agttagcttc	ggaagtgtga	agtcactcat	aagcttgccc	tgcttcattg	cgcacgcgag	1020
catcccttcc	tcgggtgcgag	aggagcgtgg	gttgactgat	gatctagtac	ggatatcggt	1080
gggtattgag	gatgtggatg	acctcatagc	tgatcttgat	tacgcgctca	ggtcgggtcc	1140
agcatagatc	atacaaaatc	tggactatgg	cgtctcgggt	tctagttaat	caagttgtag	1200
atgtgatatg	cattggtgat	tcatttggtt	agctgcaaca	gtaataataa	acttctgcac	1260
gagtattttc	tgaatgacg	agcccacggt	tgtatgtgtt	gttcctcata	ggcttcaaca	1320
gaaaaaccct	gaggccaact	gacaagtagc	aacattcata	aacttcacaa	catcgatact	1380
tggttctgcc	catgttcatt	tttcttggtc	gccattgtga	cggctttgta	gctcaagtag	1440
gaaggagtga	catggccggt	ggttgatggg	gagaaaagga	gttggttcgt	cggatcgatc	1500
cgtgtaggcg	cttgtgtatt	ttgtatatgg	tgtttttcgt	ctgtgcaggt	gagtctgtgt	1560
atacatctgg	agactggatt	attcatgggc	attggtgtgg	cggatgaagaa	taatgtgacg	1620
attcttttgt	agtgtatcta	agaactgtga	tgttcttgtg	caaaaaaaaa	aaaaaaaaaa	1680
aaaaaaaaaa	aaaaaaaaaa					1699

<210> 72

<211> 381

<212> PRT

<213> Triticum aestivum

<400> 72

<400> 2

His	Glu	Ser	Val	Ala	Thr	Ile	Leu	Thr	Ser	Phe	Glu	Asn	Ser	Phe	Asp
1				5					10					15	

Lys	Tyr	Gly	Ala	Leu	Ser	Thr	Pro	Leu	Tyr	Gln	Thr	Ala	Thr	Phe	Lys
			20					25					30		

Gln	Pro	Ser	Ala	Thr	Val	Asn	Gly	Ala	Tyr	Asp	Tyr	Thr	Arg	Ser	Gly
		35					40						45		

Asn	Pro	Thr	Arg	Asp	Val	Leu	Gln	Ser	Leu	Met	Ala	Lys	Leu	Glu	Lys
		50				55					60				

Ala	Asp	Gln	Ala	Phe	Cys	Phe	Thr	Ser	Gly	Met	Ala	Ser	Leu	Ala	Ala
	65				70					75					80

Val	Thr	His	Leu	Leu	Gln	Ala	Gly	Gln	Glu	Ile	Val	Ala	Gly	Glu	Asp
			85					90						95	

Ile	Tyr	Gly	Gly	Ser	Asp	Arg	Leu	Leu	Ser	Gln	Val	Val	Pro	Arg	Asn
		100						105						110	

Gly	Ile	Val	Val	Lys	Arg	Val	Asp	Thr	Thr	Lys	Ile	Asn	Asp	Val	Thr
		115					120						125		

Ala	Ala	Ile	Gly	Pro	Leu	Thr	Arg	Leu	Val	Trp	Leu	Glu	Ser	Pro	Thr
		130					135				140				

Asn	Pro	Arg	Gln	Gln	Ile	Thr	Asp	Ile	Lys	Lys	Ile	Ser	Glu	Ile	Ala	145	150	155	160
His	Ser	His	Gly	Ala	Leu	Val	Leu	Val	Asp	Asn	Ser	Ile	Met	Ser	Pro	165	170	175	
Val	Leu	Ser	Trp	Pro	Ile	Glu	Leu	Gly	Ala	Asp	Ile	Val	Met	His	Ser	180	185	190	
Ala	Thr	Lys	Phe	Ile	Ala	Gly	His	Ser	Asp	Leu	Met	Ala	Gly	Ile	Leu	195	200	205	
Ala	Val	Lys	Gly	Glu	Ser	Leu	Ala	Lys	Glu	Ile	Ala	Phe	Leu	Gln	Asn	210	215	220	
Ala	Glu	Gly	Ser	Gly	Leu	Ala	Pro	Phe	Asp	Cys	Trp	Leu	Cys	Leu	Arg	225	230	235	240
Gly	Ile	Lys	Thr	Met	Ala	Leu	Arg	Val	Glu	Lys	Gln	Gln	Asp	Asn	Ala	245	250	255	
Gln	Lys	Ile	Ala	Glu	Phe	Leu	Ala	Ser	His	Pro	Arg	Val	Lys	Gln	Val	260	265	270	
Asn	Tyr	Ala	Gly	Leu	Pro	Asp	His	Pro	Gly	Arg	Ser	Leu	His	Tyr	Ser	275	280	285	
Gln	Ala	Lys	Gly	Ala	Gly	Ser	Val	Leu	Ser	Phe	Gln	Thr	Gly	Ser	Leu	290	295	300	
Ser	Leu	Ser	Lys	His	Val	Val	Glu	Thr	Thr	Lys	Tyr	Phe	Asn	Val	Thr	305	310	315	320
Val	Ser	Phe	Gly	Ser	Val	Lys	Ser	Leu	Ile	Ser	Leu	Pro	Cys	Phe	Met	325	330	335	
Ser	His	Ala	Ser	Ile	Pro	Ser	Ser	Val	Arg	Glu	Glu	Arg	Gly	Leu	Thr	340	345	350	
Asp	Asp	Leu	Val	Arg	Ile	Ser	Val	Gly	Ile	Glu	Asp	Val	Asp	Asp	Leu	355	360	365	
Ile	Ala	Asp	Leu	Asp	Tyr	Ala	Leu	Arg	Ser	Gly	Pro	Ala	370	375	380				